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August 29, 2003, 11:17:59 ; Search time 33 Seconds (without alignments) 639.716 Million cell updates/sec
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GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	Polypeptide encode Polypeptide encode Polypeptide encode Polypeptide encode HCV polypeptide se HCV NS4 region fro HCV NS4 region fro HCV NS4 region fro	Polypeptide encode
SUMMARIES		AAR63286
DB	112 123 144 144 144	12
Length	133 133 133 209 128 1128 117	133
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Score	133 988 988 888 55	25
Result No.	110m450c8	σ

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AAR63287 AAR37936 AAR1936 AAR1936 AAR16378 AAR72262 AAR63216 AAR63316 AAR37941 AAR37941 AAR37941 AAR37941 AAR37941 AAR37997 AAR37897	24 94 24 94 24 94 24 94
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RESULT 1 AAR63288	AAR63288 standard; Protein;		AAR63288;		25-MAR-2003	01-AUG-1995		Polypeptide (Hepatitis C	classification		Hepatitis C virus type 3.		WO9425601-A2.		10-NOV-1994.		27-APR-1994;		27-APR-1993;	05-AUG-1993;		(INNO-) INNOGENETICS NV		Maertens G,	200 F C TOTAL	NFI; 1994-3382///44.	1000
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                                                                                                                                                                                                                                                                                                          0; Gaps
New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                                                                                                                                                    the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the NSJ/NS4 region of HCV subtype 3a and is taken from a clone designated
                                                                                                                                                                                                                                                                                  100.0%; Score 133; DB 15; Length 133; 100.0%; Pred. No. 1.6e-118; ive 0; Mismatches 0; Indels 0
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                                          Claim 11; Page 125; 404pp; English.
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Matches 133; Conserv
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01-AUG-1995
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New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    73.7%; Score 98; DB 15; Length 133; 100.0%; Pred. No. 2.9e-85; Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Polypeptide encoded by hepatitis C virus NS3/NS4 sequence.
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                                                                                                                              Claim 11; Page 127; 404pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR63290 standard; Protein; 133 AA.
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Matches 98; Conservative
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01-AUG-1995
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1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
                                                              Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (i) the region spanning positions 417-957 of the Core/El region of HCV subtype 3s; (ii) the region spanning positions 4892-5292 of the NS3 region of HCV type 3; (iii) the region spanning positions 4892-5292 of the NS3/4 region of HCV type 3; (iv) the region spanning positions 802-8235 of the NS3/6 region of HCV subtype 3s; (iv) the subgroup of HCV subtype 3s; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an
                                                                                                                                                                                                          isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                         Length 209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
                                                                                                                                                                                                                                                                                                                                                         .73.7%; Score 98; DB 15; 100.0%; Pred. No. 4.3e-85; tive 0; Mismatches 0;
   treatment, diagnosis and typing of HCV isolates
                                   Disclosure; Page 274-275; 404pp; English.
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nes 98; Conserv
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                                                                                        Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more nucleotides selected from an HCV type 3 genomic sequence, more particularly (1) the region spanning positions 47-957 of the NS3 region of HCV type 3; (111) the region spanning positions of the NS3 region of HCV type 3; (111) the region spanning positions 802-823 of the NS5 region of HCV type 3; (11) the region spanning positions 802-823 of the NS5 region of the BR36 subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic region spanning positions 802-8235 of the NS5 region of the BR36 subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic sisolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the N33/NS4 region of HCV subtype 3a and is taken from a clone designated
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New polynucleotide sequences from hepatitis C virus - and relate vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
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                                                                                                                                                                                                                                                                                                                                                                                                                     73.7%; Score 98; DB
100.0%; Pred. No. 2.9
iive 0; Mismatches
                                                               Claim 11; Page 128-129; 404pp; English.
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93EP-0402019.
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(first entry)
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Best Local Similarity 100.0
Matches 98; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1994-358277/44.
                                                                                                                                                                                                                                                                                                                                                                                       133 AA;
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18-AUG-1995
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The sequences given in AAR37932-37 show amino acids 1638-1765 of the NS4 region of hepatitis C virus-3 (HVV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HVV genome revealed the existance of three distinct groups of HVV.

Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43088-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type 0 files. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same region between type 3 and type 1 sequences.

C degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 3 and type 1 sequences.

C Updated on 25-MAR-2003 to correct PN field.)
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                                                                                                                                                                                                                                                                                                                                                                              11 TKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPDKEVL 70
                                                                                                                                                                                                                                                                                                                                                                                              of the NS4
                                                                                                                                                                                                                                                                                                                                               Gaps
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                                                                                                                                                                                                                                                                                                          Length 128;
                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                          DB 14; L
                                                                                                                                                                                                                                                                                                        66.2%; Score 88; DB 100.0%; Pred. No. 9.1 iive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                 71 YQQYDEMEECSQAAPYIEQAQVIAHQFK 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VQQYDEMEECSQAAPYIEQAQVIAHQFK 92
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR37937 standard; Protein; 128 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HCV NS4 region consensus sequence.
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(first entry)
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88; Conservative
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                                                                                                                                                                                                                                                                         128 AA;
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23-SEP-1993
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Best Local S
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region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the N31 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 3 and type 1 sequences.
(Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11 TKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPDKEVL 70
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existence of three distinct groups of HCV.
Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type I and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                     Length 128;
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                                                                                                                                                                                                                                                                                                                                                                                                                  66.2%; Score 88; DB 14; 100.0%; Pred. No. 9.1e-76; iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           65 YQQYDEMEECSQAAPYIEQAQVIAHQFK 92
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HCV NS4 region from donor T0036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (COMM-) COMMON SERVICES AGENCY
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92GB-0013362.
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(first entry)
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nes 88; Conservative
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                                                                                                                                                                                                                                                                                                                                                   128 AA;
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24-JUN-1992;
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C Updated on 25-MAR-2003 to correct PN field.)
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type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 3 and type 1 sequences. (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                               Gaps
                                                                                                                                     8 HPITKYIMACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPA 62
                                                                                                                                                 1 HPITKYIMACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPA 55
                                                                                                                                                                                                                                                                                                                                Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                     41.4%; Score 55; DB 14; Length 117; 100.0%; Pred. No. 2e-44; Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                      AAR37933 standard; Protein; 127 AA
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                                                                                                                                                                                                                                                                                                          HCV NS4 region from donor T0038.
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92GB-0013362.
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                                                                                                Similarity 100.
55; Conservative
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N-PSDB; AAQ43107.
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                                                            117 AA;
                                                                                                                                                                                                                                                                                                                                                                     Hepatitis C virus.
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23-SEP-1993
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                                                              Sequence
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Matches
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Length 127;

39.1%; Score 52; DB 14; 100.0%; Pred. No. 1.5e-41;

Query Match Best Local Similarity

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
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                                                                                                                                                                                                                                                       Hepatitis C virus; HCV; primer; probe; detection; diagnosis;
classification; immunisation; prophylaxis; serotyping.
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                                                                                                                                                                                              Polypeptide encoded by hepatitis C virus NS3/NS4 sequence.
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Pred. No. 1.6e-41;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         39.1%; Scor. 100.0%; Pred. No. 1... 0, Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 11; Page 121-122; 404pp; English.
AAR63286 standard; Protein; 133 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         93EP-0401099.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94WO-EP01323
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                                                                                                              (updated)
(first entry)
                                                                                                                                                                                                                                                                                                                                       Hepatitis C virus type 3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maertens G, Stuyver L;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1994-358277/44.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
es 52; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 133 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB; AAQ78038.
                                                                                                                                                                                                                                                                                                                                                                                                  WO9425601-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-APR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-APR-1993;
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                                                                                                        25-MAR-2003
01-AUG-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                           10-NOV-1994.
                                                     AAR63286;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
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25-MAR-2003
23-SEP-1993
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR37936
Db
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                         Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (1) the region spanning positions 417-957 of the Core/F1 region of HCV subtype 3s; (1i) the region spanning positions 482-522 of the NS3 region of HCV type 3; (1ii) the region spanning positions 482-522 of the NS3 region of HCV type 3; (iii) the region spanning positions 802-8235 of the NS5 region of the BR36 subgroup of HCV subtype 3s; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation gaainst HCV, for the detection of antibodies directed against HCV and for secretyping. This sequence corresponds to the NS3/NS4
                                                                                                                                                                                                                                                                                                                                                              New polynucleotide sequences from hepatitis C virus - and related
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      region of HCV subtype 3a and is taken from a clone designated
                                                                                                                             Hepatitis C virus; HCV; primer; probe; detection; diagnosis; classification; immunisation; prophylaxis; serotyping.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 133;
                                                                                                        Polypeptide encoded by hepatitis C virus NS3/NS4 sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    39.1%; Score 52; DB 15; Length 13: 100.0%; Pred. No. 1.6e-41; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                       Claim 11; Page 123-124; 404pp; English.
                            AAR63287 standard; Protein; 133 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR37935 standard; Protein; 117 AA.
                                                                                                                                                                                                                              94WO-EP01323.
                                                                                                                                                                                                                                                   93EP-0401099.
93EP-0402019.
                                                                                     (first entry)
                                                                                                                                                                                                                                                                                    (INNO-) INNOGENETICS NV SA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ouery Match
Best Local Similarity 100.7
Matches 52; Conservative
                                                                                                                                                              Hepatitis C virus type 3.
                                                                                                                                                                                                                                                                                                          Stuyver L;
                                                                        (updated)
                                                                                                                                                                                                                                                                                                                              WPI; 1994-358277/44.
N-PSDB; AAQ78039.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133 AA;
                                                                                                                                                                                  WO9425601-A2
                                                                                                                                                                                                                              27-APR-1994;
                                                                                                                                                                                                                                                    27-APR-1993;
                                                                                                                                                                                                                                                              05-AUG-1993;
                                                                       25-MAR-2003
01-AUG-1995
                                                                                                                                                                                                                                                                                                         Maertens G,
                                                                                                                                                                                                         10-NOV-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                  AAR63287;
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      RESULT 10
AAR63287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
AAR37935
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The sequences given in AAR37932-37 show amino acids 1638-1765 of the NS4 region of hepatitis C virus-3 (HVV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 3 and type 1 sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 117;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 48; DB 14; I
Pred. No. 8.9e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         36.1%; Scor.
100.0%; Pred. No. v...
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Fig 9b; 120pp; English.
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                                                                                    HCV NS4 region from donor T0026.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HCV NS4 region from donor T1787.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (COMM-) COMMON SERVICES AGENCY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Yap PL;
                                                                                                                                                                                                                                                                                                                                                                                                                          92WO-GB02143.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                91GB-0024696.
(updated)
(first entry)
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(first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chan S, Simmonds P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1993-182554/22.
N-PSDB; AAQ43109.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 48; Conserv
                                                                                                                                                                                                                                        Hepatitis C virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 117 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                       20-NOV-1992;
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24-JUN-1992;
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us-09-638-693-36.oli.rag

Chan S,

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The present invention relates to hepatitis C virus (HCV) core antigen and NS (nonstructural) 3/4a antibody combination assay that can detect both HCV antigens and antibodies present in a sample using a single solid matrix as well as immunoassay solid supports for use in the assay. The solid support is useful for detecting HCV infection in a biological sample. The present sequence is MEFA (multiple epitope fusion antigen) in a protein. This sequence is used in the exemplification of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hepatitis C virus; HCV; NS3/4a conformational epitope; seroconversion; immunoassay solid support; multiple epitope fusion antigen; MEFA;
                                                                                                                                                                                             Coit D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Coit D;
                                                                                                                                                                                                                                                                                                       Immunoassay solid support useful for detecting hepatitis C virus infection in a biological sample, comprises at least one of HCV anti-core antibody and HCV NS3/4a epitope, bound to the support
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HCV multiple epitope fusion antigen (MEFA) 7.1 protein sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 829;
                                                                                                                                                                                             George-Nasciemento C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Tandeske L, George-nasciemento C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      444 GGKPAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                58 GGKPAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 41; DB 23;
Pred. No. 2.1e-30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30.8%; Scor.
100.0%; Pred. No. ...
                                                                                                                                                                                             Arcangel P, Tandeske L,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAU76378 standard; Protein; 1099 AA
                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Fig 7; 87pp; English.
                                                                         15-JUN-2000; 2000US-212082P. 02-APR-2001; 2001US-280811P. 02-APR-2001; 2001US-280867P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-JUN-2000; 2000US-212082P. 02-APR-2001; 2001US-280811P. 02-APR-2001; 2001US-280867P.
                                     14-JUN-2001; 2001WO-US19369.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .4-JUN-2001; 2001WO-US19156
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Matches 41; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               non-structural protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Arcangel P,
                                                                                                                                                                                                                                                   WPI; 2002-179522/23.
N-PSDB; AAD29796.
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                                                                                                                                                       CHIR ) CHIRON CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    829 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hepatitis C virus
                                                                                                                                                                                                             Medina-Selby A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Medina-selby A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO200196870-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-MAY-2002
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 20-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Synthetic
                                                                                                                                                                                             Chien DY,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
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   δλ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    The sequences given in AAR37932-37 show amino acids 1638-1765 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of this and other regions of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hepatitis C virus; NS3/4a antigen; multiple epitope fusion antigen; HCV infection; MEFA 12 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                             DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 127
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Multiple epitope fusion antigen (MEFA) 12 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     36.1%; Score 48; DB 14;
100.0%; Pred. No. 9.5e-38;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (Updated on 25-MAR-2003 to correct PN field.)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "Encoded by GAG"
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315
                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 9b; 120pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAE18690 standard; Protein; 829 AA.
                                                                                                                                                                                                             (COMM-) COMMON SERVICES AGENCY
                                                                                                                                                     91GB-0024696.
92GB-0013362.
                                                                                                               92WO-GB02143.
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Best Local Similarity 100.(
Matches 48; Conservative
                                                                                                                                                                                                                                                   Simmonds P,
                                                                                                                                                                                                                                                                                       WPI; 1993-182554/22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127 AA;
Hepatitis C virus.
                                                                                                                                                                                                                                                                                                         N-PSDB; AAQ43110
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                                     WO9310239-A2
                                                                                                                                                     21-NOV-1991;
                                                                                                             20-NOV-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unidentified
                                                                                                                                                                       24-JUN-1992;
                                                                         27-MAY-1993
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Sequence

AAE18690;

RESULT 13 AAE18690

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200..230
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (GEOR/) GEORGE-NASCIMEN
(COIT/) COIT D.
(MEDI/) MEDINA-SELBY A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2003-147573/14.
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TANDESKE L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CHIE/) CHIEN D Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; ABX14411
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Medina-Selby A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chien DY,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (ARCA/)
(TAND/)
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  The present invention relates to a new immunoassay solid support

consisting essentially of at least one hepatitis C virus (HCV) NS3/4a

conformational epitope and a multiple epitope fusion antigen (MEFA),

bound to the support. The NS3/4a conformational epitope and/or

MEFA reacts specifically with anti-HCV antibodies present in a biological

sample from an HCV infected individual. The immunoassay of the invention

is useful for detecting hepatitis C virus infection in a biological

sample. The method of the invention provides a sensitive, accurate

CG dagnostic and prognostic tool to provide adequate patient care and to

prevent transmission of HCV by blood and by blood products, or by

CC prevent transmission of HCV by blood and by blood products, or by

CF sensonal contact. Use of NS3/4a conformational epitope in combination

CC with MEFA, provides a sensitive and reliable method for detecting early

CF serconversion. Use of MEFA has the added advantages of decreasing

CF masking problems, improving sensitivity in detecting antibodies by

CF allowing a greater number of epitopes on a unit surface area of

Substrate, and improving substrate. Detection accuracy is increased and

CF believed the use of highly immunogenic HCV antigens which are present during

CF believed the property of the property of the identification

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CF believed the property of t
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the early stages of HCV seroconversion. The present amino acid sequence represents the multiple epitope fusion antigen (MEFA) 7.1 of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "Correspond to consensus sequence of amino acids 390-410 of HCV-1 E2 HVR"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note= "Correspond to amino acids 303-320 of HCV-1 E1" (79..199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /note= "Correspond to amino acids 1-156 of HCV-1 hSOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                             Immunoassay solid support, useful for detecting hepatitis C virus infection in biological sample, comprises HCV NS3/4a conformational epitope and multiple epitope fusion antigen bound to the support -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Immunoassay solid support; Hepatitis C Virus type-1; HCV-1; HCV-2; MS3/4a conformational epitope; multiple epitope fusion antigen 7.1; MEFA 7.1; anti-HCV antibody; NS3/4a conformational antigen; HCV-3; HCV infection; Hepatitis C Virus type-2; Hepatitis C Virus type-3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1099;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HCV multiple epitope fusion antigen 7.1 (MEFA 7.1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30.8%; Score 41; DB 23; I
100.0%; Pred. No. 2.6e-30;
ive 0; Mismatches 0;
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Chimeric - Hepatitis C virus type 2.
Chimeric - Hepatitis C virus type 3.
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1..156
                                                                                                                                                                   Claim 5; Fig 5; 92pp; English
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               WPI; 2002-090228/12.
N-PSDB; ABK15345.
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Matches
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"Correspond to core region antigenic determinants from amino acids 9-32, 39-42 and 64-88 of HCV-1 and amino acids 67-84 of HCV-2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Correspond to core region antigenic determinants from amino acids 9-32, 39-42 and 64-88 of HCV-1 and amino acids 67-84 of HCV-2"
/note= "Correspond to consensus sequence of amino acids 384-414 of HCV-1 and HCV-2 E2 HVR"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Immunoassay solid support for detecting Hepatitis C Virus infection in
biological samples, comprises Hepatitis C Virus conformational epitope
and multiple epitone fusion apriden
                                                                                                                                                                                                                                                                                                                      /note= "Correspond to amino acids 1689-1735 of HCV-3 5-1-1 epitope"
                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "Correspond to amino acids 1689-1735 of HCV-2 5-1-1 epitope" 846..881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note= "Correspond to amino acids 1901-1936 of HCV-1 polypeptide C100" 884..919
                                                                                                           /note= "Correspond to amino acids 1193-1658 of HCV-1
                                                                                                                                                                                                                  /note= "Correspond to amino acids 1689-1735 of HCV-1 5-1-1 epitope"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "Correspond to amino acids 2278-2313 of HCV-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "Correspond to amino acids 2278-2313 of HCV-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and multiple epitope fusion antigen
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699..745
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-JUN-2001; 2001US-0881654
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antibodies by allowing a greater number of epitopes on a unit area of substrate, and improves selectivity. The present sequence represents HCV multiple epitope fusion antigen 7.1 (MEPA 7.1), a mutant HCV polyprotein derived from various regions of HCV type 1, 2, or 3 (HCV-1, HCV-2, or HCV-3) polypeptide sequences.
  8×88888×8
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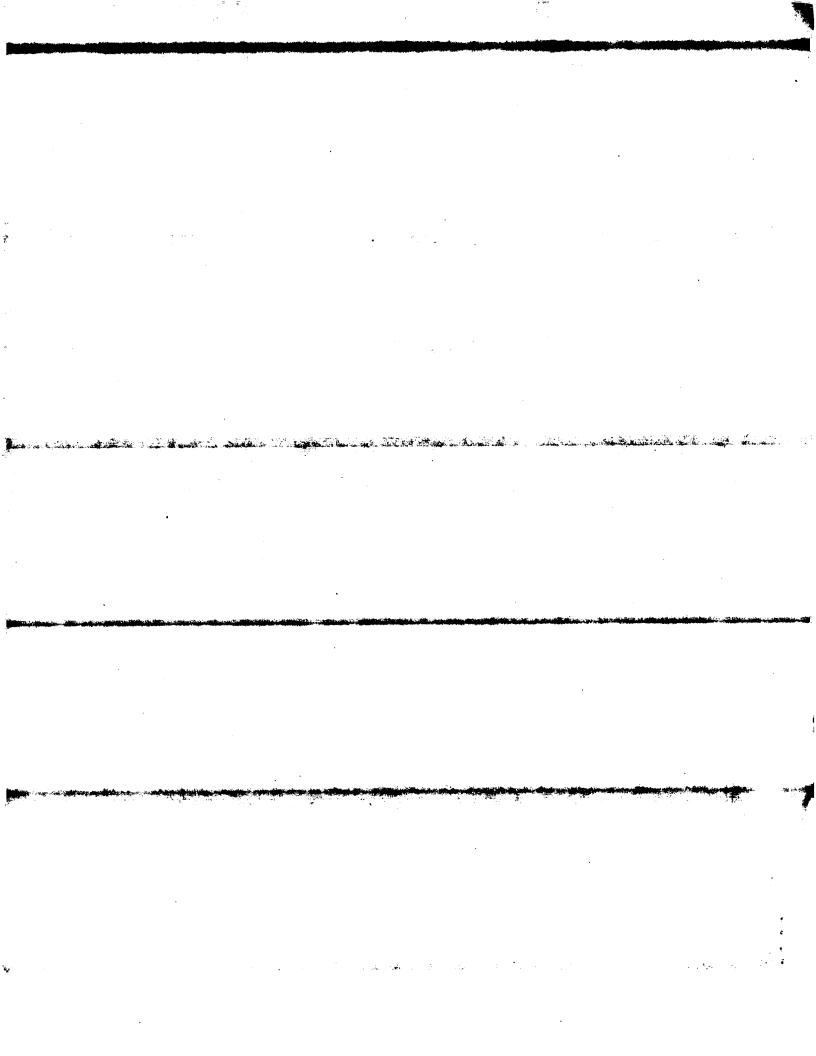
Sequence 1099 AA;

Gaps ; 0 Query Match 30.8%; Score 41; DB 24; Length 1099; Best Local Similarity 100.0%; Pred. No. 2.6e-30; Matches 41; Conservative 0; Mismatches 0; Indels (

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Search completed: August 29, 2003, 11:23:31 Job time : 34 secs



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Length 128;
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MEDIUM TYPE: Floppy disk
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
COMPUTER: IBM PC Compatible
COMPUTER: IBM PC Compatible
COMPUTER: IBM PC Compatible
SOFTWARE: PatentIn Release #1.0. Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/244,116B
FILING DATE: 15-JUL-1994
CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: PCT/GB92/02143
FILING DATE: 20-NOV-1992
ATTORNEY/AGENT INFORMATION:
NAME: Sibley, Kenneth D.
REGISTRATION NUMBER: 31,665
REFERENCE/DOCKET NUMBER: 1749-125
TELECOMMUNICATION INFORMATION:
TELEPHONE: 704-337-1561
TELEPHONE: 704-34-2014
INFORMATION FOR SEQ ID NO: 17:
SEQUIENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                Sequence 17. Application US/08244116B
Fatent No. 5763159
GENERAL INFORMATION:
APPLICANT: Simmonds, Peter
APPLICANT: Chan, Shiu-Wan
APPLICANT: Typ, Peng L.
TITLE OF INVENTION: Hepatitis-C Virus Testing
NUMBER OF SEQUENCES: 53
CORRESPONDENCE ADDRESS:
ADDRESSEE: Bell, Seltzer, Park & Gibson, P.A.
STREET: 1211 East Morehead Street
CITY: Charlotte
STATE: No. 5763159th Carolina
                US-09-198-723A-20
US-09-198-723A-20
US-09-263-933-41
US-09-263-933-11
US-08-38-616-12
US-08-38-616-12
US-08-315-850-12
US-09-315-850-12
US-09-263-933-2
US-09-263-933-2
US-09-263-933-16
US-08-324-977-32
US-08-324-977-32
US-08-324-977-32
US-08-94-616-32
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 1;
         -09-198-723A-19
                                                                                                                                                                                                                  ALIGNMENTS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: Hepatitis-C virus US-08-244-116B-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 128 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear MOLECULE TYPE: peptide
         amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HYPOTHETICAL: yes
FRAGMENT TYPE: int
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TYPE: amino STRANDEDNESS:
                                                                                                                                                                                                                                                            US-08-244-116B-17
Query Match
Sequence 107, App
Sequence 107, App
Sequence 107, App
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                                                                                   (without alignments)
312.630 Million cell updates/sec
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                                                                      August 29, 2003, 11:22:55 ; Search time 18 Seconds
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/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
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/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
         GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-198-723A-17
                                                                                                                                                                                                                                  Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -09-198-723A-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -09-543-376B-1
                                                                                                                                                                                          328717 seqs, 42310858 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMMARIES
                                                                                                                                                                                                                                                                                         Post-processing: Listing first 45 summaries
                                                   OM protein - protein search, using sw model
                                                                                                                                                                      Gapop 60.0 , Gapext 60.0
                                                                                                                                                                                                                                                                                                               Issued_Patents_AA:*
                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                  US-09-638-693-36
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                                                                                                                                                            Scoring table:
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Perfect score:
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No.
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PROCESS FOR THE DETERMINATION OF PEPTIDES
CORRESPONDING TO IMMUNOLOGICALLY IMPORTANT EPITOPES AND THE
IN A PROCESS FOR DETERMINATION OF ANTIBODIES OR BIOTINVATE
PEPTIDES CORRESPONDING TO IMMUNOLOGICALLY IMPORTANT EPITOPE
PROCESS FOR PREPARING THEM AND COMPOSITIONS CONTAINING THEM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 20; DB 3; Le
Pred. No. 9.1e-13;
                                                                                                                                                                                                                                                                                                   Score 20; DB 3; LA
Pred. No. 9.1e-13;
                                                                                                                                                                                                                                                                                             15.0%; Score ...
100.0%; Pred. No. 9.1e-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/09/112,206
FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/146,028
                                           1487-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 107, Application US/09112206 Patent No. 6210903
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Sequence 2, Application US/08244116B
Patent No. 5763159
GENERAL INFORMATION:
APPLICANT: Simmonds, Peter
APPLICANT: Chan, Shiu-Wan
                                                                                                                                                                                                                                                                                                                                                                                    57 LGGKPAIVPDKEVLYQQYDE 76
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100.0%; Pre
  NAME: SADOFF, B.J.
REGIZTRATION UNDBER: 36,663
REFERENCE/DOCKET NUMBER: 1487
TELECOMMUNICATION INFORMATION:
TELEPHONE: 703-816-4100
INFORMATION FOR SEQ ID NO: 107:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57 LGGKPAIVPDKEVLYQQYDE 76
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                                                                                                                                                              LENGTH: 22 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 22 amino acids
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                                                                                                                                                                                                        single
                                                                                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION:
UNMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 20; Conserv
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Matches 20; Conserv
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                                                                                                                                                                                     TYPE: amino a STRANDEDNESS:
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                                                                                                                                                                                                                                                                US-08-723-425A-107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-112-206-107
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                                                                                                                                                                                                                                                                                                         Query Match
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                                                                                                                                                                                                                                                                                   PROCESS FOR THE DETERMINATION OF PEPTIDES
                                                                                 9 MACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPA 56
                                                            15 MACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPA
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                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PatentIn Release #1.0, Version #1.25 (EPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROCESS FOR THE DETERMINATION OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Felease #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2; Le
9.1e-13;
100.0%; Pred. No. 2.7e-39; tive 0; Mismatches 0;
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100.0%; Pred. No. ...
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: NIXON & VANDERHYE, P.C. STREET: 1100 NORTH GLEBE ROAD, 8TH FLOOR CITY: Arlington
                                                                                                                                                                                                                                                                          TITLE OF INVENTION: PROCESS FOR THE DE
TITLE OF INVENTION: CORRESPONDING TO I
TITLE OF INVENTION: IN A PROCESS FOR D
TITLE OF INVENTION: PEPTIDES CORRESPON
TITLE OF INVENTION: PROCESS FOR PREPAR
NUMBER OF SEQUENCES: 453
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Ver
CURRENT APPLICATION DATA:
SOFTWARE: TOWNERS: US/08/146,028
INFORMATION FOR SEQ ID NO: 107:
SEQUENCE CHARACTERISTICS:
LENGTH: 20 mino acids
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Patent No. 6165730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                   Sequence 107, Application US/08146028 Patent No. 5891640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57 LGGKPAIVPDKEVLYQQYDE 76
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ATTORNEY/AGENT INFORMATION:
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Best Local Similarity 100.0
Matches 20; Conservative
                    48; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear
MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amino acid
Best Local Similarity
                                                                                                                                                                                                                                           GENERAL INFORMATION: APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: VA
COUNTRY: US
ZIP: 22201
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US-08-723-425A-107
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US-08-146-028-107
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                      Matches
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Score 19; DB 1; Length 247;
Pred. No. 8e-11;
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APPLICANT: FUKE, Isao
APPLICANT: MORI, CIBSALO
APPLICANT: MARMIZAWA, Akahisa
APPLICANT: TAKAMIZAWA, Akahisa
APPLICANT: TYSHIDA, Iwao
TITLE OF INVENTION: NON-A, NON-B HEPATITIS VIRUS GENOMIC
TITLE OF INVENTION: CDNA AND ANTIGEN POLYPEPTIDE
NUMBER OF SEQUENCES: 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
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  IBM PC compatible YSTEM: PC-DOS/MS-DOS, Version 5.0
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100.0%; Pred. No. oc.
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MEDIUM TYPE: Diskette, 3.5 in, 1.44Mb
COMPUTER: IBM PC compatible
                                                                                   PAPLICATION NUMBER: USA, 977

PRILING DATE: 18-0CT-1994

PRIOR APPLICATION DATA: 18-0CT-1994

APPLICATION NUMBER: UP 2-167466

FILING DATE: 25-UNN-1990

PRIOR APPLICATION DATA: P 2-30921

FILING DATE: 31-AGG-1990

PRIOR APPLICATION DATA: D-305605

FILING DATE: 09-NOV-1990

PRIOR APPLICATION DATA: APPLICATION NUMBER: US 07/635,451

FILING DATE: 28-DEC-1991

ATOMNES: Stevens-Smith, Theresa M. REGISTRATION NUMBER: 36,281

REGISTRATION NUMBER: 36,281

REGISTRATION NUMBER: 36,281

REGISTRATION NUMBER: 36,281

TELEPHONE: C202,659-2930
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6 LTHPITKYIMACMSADLEV 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (202) 659-2930
TELEFAX: (202) 887-0357
TELES: 440142
INFORMATION FOR SEQ ID NO: 44
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 247 amino acids
amino acid
GY: linear
                                             SOFTWARE: ASCII
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 14.3
Best Local Similarity 100.
Matches 19; Conservative
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                       OPERATING SYSTEM:
SOFTWARE: ASCII
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CITY: Washington
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Patent No. 5747339

GENERAL INFORMATION:
APPLICANT: CARIAMA, Hiroto
APPLICANT: FUKE, ISao
APPLICANT: TAKAMIANA, Akahisa
APPLICANT: TAKAMIANA, Akahisa
APPLICANT: TAKAMIANA, Akahisa
APPLICANT: YOSHIDA, IWao
TITLE OF INVENTION: NON-A, NON-B HEPATITIS VIRUS GENOMIC
TITLE OF INVENTION: CDNA AND ANTIGEN POLYPEPTIDE
NUMBER OF SEQUENCES: 50
CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #10. Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/244,116B
FILING DATE: 15-JUL-1994
CLASSIFICATION NUMBER: US/08/244,116B
FILING APPLICATION 1435
PRIOR APPLICATION NUMBER: PCT/GB92/02143
APPLICATION NUMBER: PCT/GB92/02143
APPLICATION NUMBER: 20-NOV-1992
ATONNEY/AGENT INPORMATION:
NAME: S1bley, Kenneth D.
REGISTRATION NUMBER: 31,665
REGISTRATION NUMBER: 1749-125
TELECOMMULCATION INFORMATION:
TELEPHONE: 704-377-1561
                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Bell, Seltzer, Park & Gibson, P.A.
STREET: 1211 East Morehead Street
TITLE OF INVENTION: Hepatitis-C Virus Testing NUMBER OF SEQUENCES: 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
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MEDIUM TYPE: Diskette, 3.5 in, 1.44Mb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
14.3%; Score 19;
Best Local Similarity 100.0%; Pred. No.
Matches 19; Conservative 0; Mismatcl
                                                                                                                                                     COUNTRY: United States
2IP: 28234
COMPUTER READABLE FORM:
COMPUTER: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                             CITY: Charlotte
STATE: No. 5763159th Carolina
COUNTRY: United States
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 704-334-2014
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           19 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FRAGMENT TYPE: Internal ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear
MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-244-116B-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-324-977-44
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGIH:
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APPLICANT: FUKE, Isao
APPLICANT: FUKE, Isao
APPLICANT: MORI, Chisato
APPLICANT: TANIZAMA, Akahisa
APPLICANT: TSANIZAMA, Akahisa
APPLICANT: TOSHIDA, Iwao
TITLE OF INVENTION: NON-A, NON-B HEPATITIS VIRUS GENOMIC
TITLE OF INVENTION: CDNA AND ANTIGEN POLYPEPTIDE
NUMBER OF SEQUENCES: 50
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 19; DB 2; Le
Pred. No. 8e-11;
0; Mismatches 0;
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COMPUTER FADBLE FORM:
MEDIUM TYPE: Diskette, 3.5 in, 1.44Mb
COMPUTER: IBM PC compatible
COMPUTER: FOR PC-DOS/MS-DOS, Version 5.0
         PRIOR DATE: U. LOCALLY
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/324,977
FILING DATE: 18 OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-167466
FILING DATE: 25-JUN-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-30921
FILING DATE: 31-AUG-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/769,996
FILING DATE: 28-DEC-1990
ATPORNEY AGENT INFORMATION:
TREFERENCE/DOCKT NUMBER: 31,51
REGISTRATION NUMBER: 31,541
REGISTRATION NUMBER: 31,541
REFERENCE/DOCKT NUMBER: 31,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 1725 K St. N.W. Suite 1000 CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-315-850-44;
; Sequence 44, Application US/09315850
; Patent No. 6217872
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Best Local Similarity 100.0%;
Matches 19; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 247 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE:
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Pred. No. 8e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: OKATAWA, HIroto
APPLICANT: FUKE, Isao
APPLICANT: FUKE, Isao
APPLICANT: FUKE, Isao
APPLICANT: TAKMIZAMA, Akahisa
APPLICANT: TOSHIDA, Iwao
TITLE OF INVENTION: NON-A, NON-B HEPATITIS VIRUS GENOMIC
TITLE OF INVENTION: CDNA AND ANTIGEN POLYPEPTIDE
NUMBER OF SEQUENCES: 50
CORRESPONDENCE ADDRESS:
ADDRESSE: Armatrong, Westerman, Hattori, McLeland &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
OPERATING SYSTEM: PC-DOS/MS-DOS, Version 5.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 in, 1.44Mb
COMPUTER: IBM PC COMPOTED:
OPERATING SYSTEM: PC-DOS/MS-DOS, Version 5.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                 CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION UNDER: US 07/769,996
FILING DATE: 02-CCT-1991
APPLICATION NUMBER: JP 2-167466
FILING DATE: 25-UNN-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-230921
FILING DATE: 31-AGG-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-305605
FILING DATE: 09-NOV-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/635,451
FILING DATE: 28-DEC-1990
ATTORNEY/AGENT INFORMATION:
NAME: Stevens-Smith, Theresa M.
REGISTRATION NUMBER: 36,281
REGISTRATION NUMBER: 36,281
REGISTRATION NUMBER: 36,281
TELEPHONE: (202) 659-2930
TELEPHONE: (202) 689-2937
TELEPHONE: (202) 887-0357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E: Naughton
1725 K St. N.W. Suite 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/904,686A
                        SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/384,616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 44, Application US/08904686A Patent No. 5998130 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14.3%; Scc.
100.0%; Pre
0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22 LTHPITKYIMACMSADLEV 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEX: 440142
INFORMATION FOR SEQ ID NO: 44:
SEQUENCE CHARACTERISTICS:
LENGTH: 247 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 100.
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-384-616-44
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 1725 K STATE: Washington STATE: D.C.
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                                                                                                                  FILING DATE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-904-686A-44
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14.3%; Score 19; DB 1; Length 631; 100.0%; Pred. No. 1.9e-10; Live 0; Mismatches 0; Indels
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APPLICANT: Sardana, Vinod V
APPLICANT: Blue, Jeffrey T
APPLICANT: Blue, Jeffrey T
TILLE OF INVENTION: DETERGENT-FREE HEPATITIS C PROTEASE
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
ADDRESSE: MERCK 6 CO., INC.
STREET: P.O. BOX 2000, 126 E. Lincoln Ave.
CITY: Rahway
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/936,865 FILING DATE:
                                                                                                                                      DE FRANCESCO=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1: Hepatitis C. Virus
NS3 Serine Protease Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                             ATTORNE, PROMEY, ROGER L.
REGISTRATION NUMBER: 25,618
REFERENCE/DOCKET NUMBER: DE F
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-628-5197
TELEFAX: 202-737-3528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       611 LTHPITKYIMACMSADLEV 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1, Application US/08936865
Patent No. 5861297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 LTHPITKYIMACMSADLEV 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: AYLER, SYLVIA A
REGISTRATION NUMBER: 36,436
REFERENCE/DOCKET NUMBER: 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION TELEPHONE: 908-594-4909
                                                                                                                                                                                                 TELEFAX: 202-737-3528
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 631 amino acids
                                                                  ATTORNEY/AGENT INFORMATION:
NAME: BROWDY, ROGER L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 631 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 100.0
Matches 19; Conservative
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                                                                                                                                                                                                                                                                                          TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RY: US
07065-0907
                         FILING DATE: 2. CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ANTI-SENSE: NO FRAGMENT TYPE: i. ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HYPOTHETICAL:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
US-08-936-865-1
                                                                                                                                                                                                                                                                                                                                                                            US-08-700-356-1
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APPLICANT: FAILLA, Cristina
APPLICANT: FAILLA, Cristina
APPLICANT: TOMET, Lidia
TITLE OF INVENTION: METHOD FOR REPRODUCING IN VITRO THE
TITLE OF INVENTION: PROTEOLYTIC ACTIVITY OF THE NS3 HEPATITIS C VIRUS (HCV)
NUMBER OF SEQUENCES:
ADDRESSEE: BROWDY AND NEIMARK, P.L.L.C.
STREET: 419 Seventh Street, N.W., Suite 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 14.3%; Score 19; DB 3; Length 247
Best Local Similarity 100.0%; Pred. No. 8e-11;
Matches 19; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                           FILING DATE: 18-COT-1934
PRIOR APPLICATION NAMES: 30-5167466
FILING DATE: 25-UN-1990
PRIOR APPLICATION NUMBER: JP 2-167466
FILING DATE: 25-UN-1990
PRIOR APPLICATION NUMBER: JP 2-230921
FILING DATE: 31-AUG-1990
PRIOR APPLICATION DATA: APPLICATION NUMBER: JP 2-305605
FILING DATE: 09-NOV-1990
PRIOR APPLICATION DATA: APPLICATION NUMBER: US 08/099,706
FILING DATE: 30-UUL-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: US 07/769,996
FILING DATE: 02-0CT-1991
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/635,451
FILING DATE: 28-DEC-1990
ATTORNEY/AGENT INFORMATION:
                                                           APPLICATION NUMBER: US/08/904,686
FILING DATE: 01-AUG-1997
APPLICATION NUMBER: US 08/324,977
APPLICATION NUMBER: US/09/315,850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: McLeland, Le-Nhung
REGISTRATION NUMBER: 31,541
REFERENCE/DOCKET NUMBER: 900703G
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1, Application US/08700356
Patent No. 5739002
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6 LTHPITKYIMACMSADLEV 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEPHONE: (202) 659-2930
TELEFAX: (202) 887-0357
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : 247 amino acids amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: D.C.
COUNTRY: USA
ZIP: 20004
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy di
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; MOLECULE TYPE: protein US-09-315-850-44
                                           PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 419 Seven
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-700-356-1
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APPLICATION.
FILING DATE: 24 NOV 1998
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: MCLAUGhlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: JB0800
TELECOMMUNICATION INFORMATION:
TELEPHONE: 9008)298-5056
TELEPHONE: 9008)298-5056
TELEFAX: (908)298-5056
TEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CURRENT APPLICATION DATA:
SOFTWARE: Microsoft Word 6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
CLASSIFTARTON
                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Schering-Plough Corp. STREET: 2000 Galloping Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Schering-Plough Corp. STREET: 2000 Galloping Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
US-09-198-723A-63
: Sequence 63, Application US/09198723A
: Patent No. 6211338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Microsoft Word 6.0.1
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                                                                                 APPLICANT: Malcolm, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: POWER MacIntosh
OPERATING SYSTEM: 8.0.1
SOFTWARE: Microsoft Word 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 14.3'
Best Local Similarity 100.
Matches 19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                              CITY: Kenilworth
STATE: New Jersey
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: Kenilworth
STATE: New Jersey
COUNTRY: USA
                          6211338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-198-723A-60
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Sequence 23, Application US/09198723A
Sequence 23, Application US/09198723A
Sequence 23, Application US/09198723A
Sequence 23, Application
Sequence 23, Application
Sequence 23, Application
Sequence 24, Station
APPLICANT: Walcolm, Bruce
APPLICANT: Walcolm, Shahriar S.
APPLICANT: Wao, Nanhua
STITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: MS3 Protease and NS4A Cofactor Peptide
NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                               Length 631;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14.3%; Score 19; DB 3; Length 632; 100.0%; Pred. No. 1.9e-10; tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                  DB 2; Le...
LABRARY: described by Tomei et al. in 1993 CLONE: CDNA clone pCD (38-9.4) POSITION IN GENOME: MAP POSITION: 1-180 US-08-936-865-1
                                                                                                                                                                                                                                                                     Query Match 14.3%; Score 19; DB Best Local Similarity 100.0%; Pred. No. 1.9 Matches 19; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMTUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Meditosh
OPERATING SYSTEM: 8.0.1
SOFTWARE: Microsoft Word 6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Schering-Plough Corp. STREET: 2000 Galloping Hill Road CITY: Kenliworth STATE: New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
US-09-198-723A-60
: Sequence 60, Application US/09198723A
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                                                                                                                                                                                                                                                                                                                                                                                                                                   611 LTHPITKYIMACMSADLEV 629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: JE08
TELECOMUNICATION INFORMATION:
TELEPHONE: (908)298-5056
TELEFAX: (908)298-5388
INFORMATION FOR SEQ ID NO: 23:
SEQUENCE CHARACTERISTICS:
LENGTH: 632 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                612 LTHPITKYIMACMSADLEV 630
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NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41,211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 100.
Matches 19; Conservative
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TOPOLOGY: linear
MOLECULE TYPE: protein
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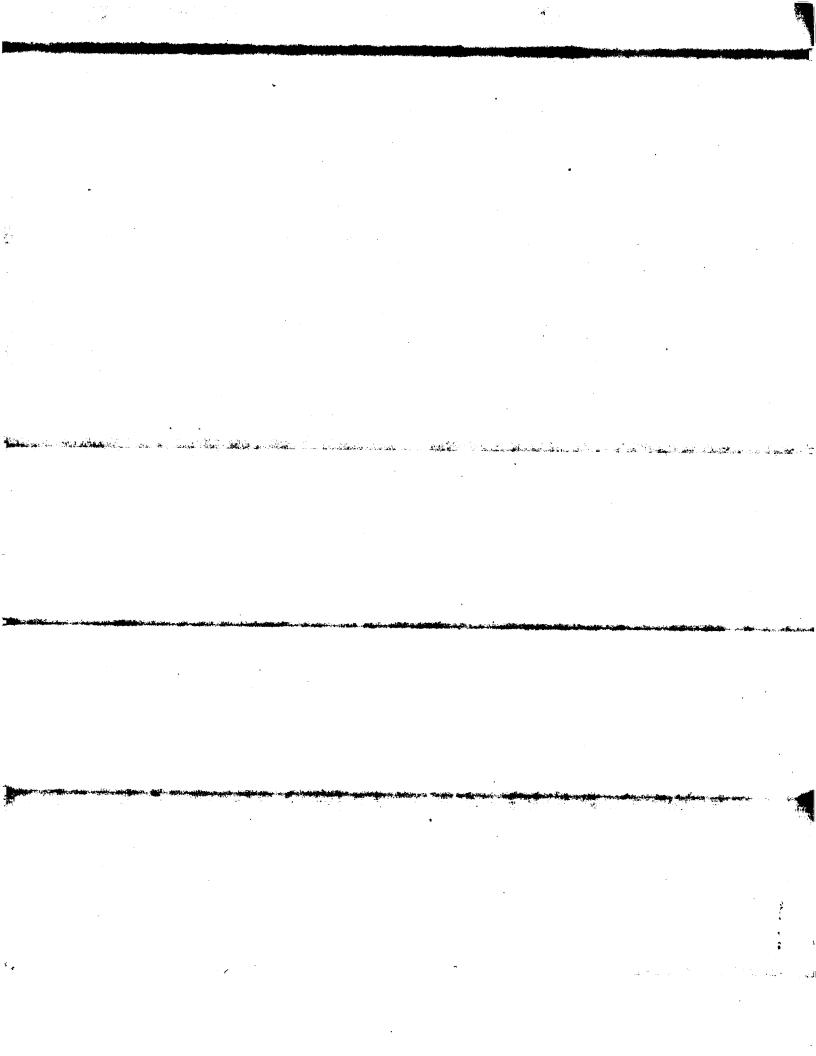
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Gaps
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APPLICANT: Yao, Nanhua TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus TITLE OF INVENTION: N33 Protease and NS4A Cofactor Peptide NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
ADDRESSEE: Schering-Plough Corp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
APPLICANT: Malcolm, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
APPLICANT: Weber, Patricia
APPLICANT: Yao, Nanhua
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14.3%; Score 19; DB 3; Length 646; 100.0%; Pred. No. 1.9e-10; tive 0; Mismatches 0; Indels
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Fatent No. 6211338
GENERAL INFORMATION:
APPLICANT: Malcolm, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
APPLICANT: Weber, Patricia
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
STREET: 2000 Galloping Hill Road
CITY: Kenling-Plough Corp.
CITY: Kenling-Plough Corp.
CITY: Kenling-Plough Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ;
;
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14.3%; Score 19; DB 3; Length 646;
Best Local Similarity 100.0%; Pred. No. 1.9e-10;
Matches 19; Conservative 0; Mismatches 0; Indels
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Best Local Similarity 100.0%; Pred. No. 1.9e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OPERATING SYSTEM: 8.0.1
SOFTWARE: Microsoft Word 6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: MCLAUGhlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: JB0800
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
                                                                                     ATTORNEY AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: JB0800
TELECOMMUNICATION INFORMATION:
TELEPHONE: (908)298-5056
INFORMATION FOR SEQ ID NO: 63:
SEQUENCE CHARACTERISTICS:
LENGTH: 646 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           626 LTHPITKYIMACMSADLEV 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6 LTHPITKYIMACMSADLEV 24
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MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
OPERATING SYSTEM: 8.0.1
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amino acid
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                         , MOLECULE TYPE: protein US-09-198-723A-63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY: linear

MOLECULE TYPE: protein

US-09-198-723A-66
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: USA
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                                                FILING DATE: 24
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ZIP: 07030
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Search completed: August 29, 2003, 11:25:28 Job time : 19 secs



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1 QNEICLTHPITKYIMACMSA......VIEPIVTTNWQKLEAFWHKH 133
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GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.
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Gapop 60.0 , Gapext 60.0
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Maximum DB seq length: 200000000
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Perfect score:
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                                                                                                                        Run on:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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7: /cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*

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                                                                                        New sequences of hepatitis C virus genotypes for diagnosis, prophylaxis and therapy. 270
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 133;
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                                                                                                                                      COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/899,046
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 133; DB 11;
100.0%; Pred. No. 2.8e-121;
iive 0; Mismatches 0;
             Sequence 36, Application US/09899046
Publication No. US20030008274A1
GENERAL INFORMATION:
APPLICANT:
TITLE OF INVENTION: Genotypes for dumber OF SEQUENCES: 270
COMPUTER REALABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
FILING DATE:
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                                                                                                                                                                                                                                                                                                                                                                                                       : 133 amino acids
amino acid
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Best Local Similarity 100.(
Matches 133; Conservative
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; MOLECULE TYPE: protein
US-09-899-046-36
US-09-899-046-36
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SEQUENCE CHARACTERISTICS
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                                                                                       US-09-899-046-38
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                       LENGTH:
                                                                                                                            Query Match
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 61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                                                                                                                                                                                                               New sequences of hepatitis C virus genotypes for diagnosis, prophylaxis and therapy. 270
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                                                                                                                                                                                                                         TITLE OF INVENTION: New sequences of hepatitis C virus TITLE OF INVENTION: genotypes for diagnosis, prophylaxi NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
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IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                      RESULT 2
US-09-878-281-36
; Sequence 36, Application US/09878281
; Publication No. US20030032005A1
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Publication No. US20030008274A1
GENERAL INFORMATION:
APPLICANT:
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                                    121 TNWQKLEAFWHKH 133
                                                      121 TNWQKLEAFWHKH 133
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amino acid
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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Matches 133; Conservative
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APPLICATION NUMBER: (
FILING DATE:
                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT:
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                              73.7%; Score 98; DB 11; Length 133; 100.0%; Pred. No. 2.4e-87; Live 0; Mismatches 0; Indels
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tive 0; Mismatches 0;
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APPLICATION NUMBER: US/09/899,046
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 40, Application US/09899046; Publication No. US20030008274Al GENERAL INFORMATION:
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IBM PC compatible
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LENGTH: 133 amino acids
TYPE: amino acid
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Best Local Similarity 100.0
Watches 98; Conservative
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Matches 98; Conservative
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                   TOPOLOGY: linear
MOLECULE TYPE: protein
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amino acid
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TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                       of hepatitis C virus diagnosis, prophylaxis and therapy.
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tive 0; Mismatches
                                                                                       New sequences
genotypes for
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; Publication No. US20030032005A1
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                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
   US20030008274A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 209 amino acids
TYPE: amino acid
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Best Local Similarity 100.
Matches 98; Conservative
                                                                                 TITLE OF INVENTION: New TITLE OF INVENTION: GENCHARDS OF SEQUENCES: 270 COMPUTER REALDABLE FORM: MEDIUM TYPE: Floppy di
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tes 98; Conserv
                                 GENERAL INFORMATION
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US-09-878-281-223
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                                                            APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SYSTEM: PC-DOS/MS-DOS
Patentin Release #1.0, Version #1.25 (EPO)
                           PatentIn Release #1.0, Version #1.25 (EPO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
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100.0%; Pred. No. ...
0; Mismatches
                                                      CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/878,281
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APPLICATION NUMBER: US/09/878, 281
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                          PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/362,455
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; Publication No. US20030032005A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/362,455
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INFORMATION FOR SEQ ID NO: 40: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                 INFORMATION FOR SEQ ID NO: 38:
                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
LENGTH: 133 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : 133 amino acids
amino acid
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Matches 98; Conservative
                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE: protein US-09-878-281-38
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear
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Best Local Similarity
Matches 98; Conserv
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US-09-899-046-223
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TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                      11 TKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPA 62
                                                                   11 TKYIMACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPA 62
                                                                                                                                                                                                                                                                                                                                                                                                                               PatentIn Release #1.0, Version #1.25 (EPO)
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/878,281
                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                   Sequence 32, Application US/09878281 Publication No. US20030032005A1 GENERAL INFORMATION: APPLICANT:
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Sequence 34, Application US/09878281
Publication No. US20030032005A1
GENERAL INFORMATION:
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APPLICATION NUMBER: 08/362,455
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Best Local Similarity 100.0%; Part Matches 52; Conservative 0;
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SEQUENCE CHARACTERISTICS:
LENGTH: 133 amino acids
TYPE: amino acid
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LENGTH: 133 amino acids
TYPE: amino acid
  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; MOLECULE TYPE: protein US-09-878-281-32
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                                                                                                                                                                    US-09-878-281-32
52;
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  Matches
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                                                                                                                                                                                                                                                         New sequences of hepatitis C virus genetypes for diagnosis, prophylaxis and therapy. 270
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11 TKYIMACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPA 62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Indels
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                                          137 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 174
                 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 11; L
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Best Local Similarity 100.0%; Pred. No. 9.1e-43;
Matches 52; Conservative 0; Mismatches 0;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                           Sequence 32, Application US/09899046
Publication No. US20030008274A1
GENERAL INFORMATION:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
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100.0%;
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INFORMATION FOR SEQ ID NO: 34:
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LENGTH: 133 amino acids
TYPE: amino acid
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LENGTH: 133 amino acids
TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION FOR SEQ ID NO:
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; MOLECULE TYPE: protein
US-09-899-046-32
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Best Local Similarity
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APPLICANT:
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US-09-899-046-32
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US-09-899-046-34
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
                                             Gaps
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Score 52; DB 11; Length 133;
Pred. No. 9.1e-43;
0; Mismatches 0; Indels
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30.8%; Score 41; DB 10; Length 1099; 100.0%; Pred. No. 2.8e-31; ive 0; Mismatches 0; Indels
                                                                                                                   58 GGKPAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: New sec
TITLE OF INVENTION: GENOLYF
NUMBER OF SEQUENCES: 270
COMPUTER REALABLE FORM:
MEDIUM TYPE: Floppy disk
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SEQUENCE CHARACTERISTICS:
LENGTH: 20 amino acids
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Matches 20; Conservative
                                                   41; Conservative
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Best Local Similarity
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US-09-899-046-97
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                            Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
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APPLICANT: ARCANGEL, Phillip
APPLICANT: TANDESKE, Laura
APPLICANT: TANDESKE, Laura
APPLICANT: GORGE-NASCIEMENTO, Carlos
APPLICANT: COLT, DOTIS
APPLICANT: MEDINA-SELBY, Angelica
TITLE OF INVENTION: IMMUNASSAYS FOR ANTI-HCV ANTIBODIES
FILE REFERENCE: 2302-17039 / PP17039.002
CURRENT APPLICATION NUMBER: US/09/881,654
CURRENT FILING DATE: 2001-06-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION: Description of Artificial Sequence: US-09-881-239-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        444 GGKPAIVPDKEVLYQQYDEMEECSQAAPXIEQAQVIAHOEK 484
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Pred. No. 9.1e-43; mismatches 0;
Best Local Similarity 100.0%; Pred. No. 9.1
Matches 52; Conservative 0; Mismatches
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PRIOR FILING DATE: 2000-06-15
PRIOR APPLICATION NUMBER: 60/280,811
PRIOR FILING DATE: 2001-04-02
PRIOR APPLICATION NUMBER: 60/280,867
PRIOR FILING DATE: 2001-04-02
NUMBER OF SEQ ID NOS: 7
SOFTWARE: PATENTIN OF: 2.0
                                                                                                                                                                                                                                                                                      APPLICANT: CHIEN, David Y.
APPLICANT: CHIEN, Phillip
APPLICANT: TANDESKE, Laura
APPLICANT: GEORGE-NASCIEMENTO, Carlos
                                                                                                                                                                                                                           Sequence 5, Application US/09881239
Publication No. US20020192639A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 4, Application US/09881654 Patent No. US20020146685A1
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US-09-881-239-5
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POSITION IN GENOME:
MAP POSITION: Positions 1688 to 1707 of HCV type 3
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100.0%; Pred. No. 1.7e-12;
tive 0; Mismatches 0;
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Sequence 97, Application US/09899046 Publication No. US20030008274A1 GENERAL INFORMATION:
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AF04686 Hepatitis
D17763 Hepatitis C
AX95311 Sequence
AF127762 Synthetic
AA454820 Sequence
AF007504 Hepatitis
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A40639 Sequence 37
A40639 Sequence 37
AX031615 Sequence
AX031885 Sequence
AX031887 Sequence
AX031887 Sequence
BD172142 New Seque
BD172143 New Seque
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AX032070 Sequence
BD172140 New Seque
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-Q-Cgn2_1/USPTO_spool/US09638693/runat_25082003_173340_22262/app_query.fasta_1.327
-DS-CGn2_1/USPTO_spool/US09638693/runat_25082003_17340_22262/app_query.fasta_1.327
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                                                                                        August 29, 2003, 12:21:40; Search time 3076 Seconds (without alignments) 1768.849 Million cell updates/sec
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1 ONBICLTHPITKYIMACMSA......VIEPIVTINWÖKLEAFWHKH 133
              GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                 OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                    2888711 seqs, 20454813386 residues
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, Ygapext 60.0
, Fgapext 7.0
, Delext 7.0
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GLLQRATQQQAVIEPIVTTNWQKLEAFWHKH"

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S Macrtens, G. and Stuyver, L.

NEW SEQUENCES OF HEPATITIS C VIRUS GENOTYPES AND THEIR USE AS THERAPEUTIC AND DIAGNOSTIC AGENTS

L PATENT: WO 9425601-A 35 10-NOV-1994;
INNOCENETICS NV (BE)
Other publication CA 2139100 941110
Other publication CN 1108030 950906
Other publication CN 1108030 950906
Other publication NO 944967 941223
Other publication NO 944967 941221
Other publication JP 7508423T 950921.
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Sequence 35 from Patent WO9425601.
A40635
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                                                                          PAT 20-SEP-2000
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Sequences of hepatitis c virus genotypes
Therapeutic and diagnostic agents
Therapeutic and diagnostic agents
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  303 GTCCTTGGATTGCTGCAGCGAGCCACCAACAACAAGCTGTCATTGAGCCCATAGTAACT 362
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Maertens, G. and Stuyver, L.
NEW SEQUENCES OF HEPATITIS C VIRUS GENOTYPES AND THEIR USE AS
THERAPEUTIC AND DIAGNOSTIC AGENTS
PATENT: MO 9422601. 37 10-NOV-1994;
INNOGENETICS NV (BE)

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Reartens,G. and Stuyver,L.

E New sequences of hepatitis C virus genotypes for diagnosis,
prophylaxis and therapy
Patent: JP 2002233389-A 18 20-AuG-2002;
NV INNOGENETICS SA
OS Unidentified
PN JP 2002233389-A/18
PP 21-NOV-2001
PF 21-NOV-2001
PF 27-APR-1993 EP 93401099.2,05-AuG-1993 EP 93402019.9 PI
GEERT MARPHENS,LIEVEN STUYVER
PC C12N15/09,A61K35/76,A61K38/00,A61K39/395,A61K39/395,
PC A61K48000,
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  PAT 18-FEB-2003
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	ACCESION A40639 VERSION A40639.1 GI:2296674 KEYWORDS SOURCE Unidentified ORGANISM unidentified Unclassified. I (bases 1 to 401) AUTHORS MARTHERS G. and Stuyver.L. TILLE NEW SEQUENCES OF HEPATITIS C VIRUS GENOTYPES AND THEIR USE AS THERAPEUTIC AND DIAGNOSTIC AGENTS JOURNAL PATENT: WO 9425601-A 39 10-NOV-1994; INNOCENETICS NV (BE) COMMENT Other publication AU 6722294 941121	Other publication CN 1108030 950906 Other publication FI 946066 941223 Other publication NO 944667 941221 Other publication JP 7508423T 950921. FEATURES Location/Qualifiers 1. 401 //mol_type="genomic DNA" //mol_type="genomic DNA" //db_xref="taxon:32644" //clone="BR36-20-165"	/note="unnamed protein product; Protein sequence is in conflict with the conceptual translation" (Adon_start=1 /protein_id="CAAQ2506.1" /db_xref="G1:2296675". /db_xref="G1:2296675". /db_xref="G1:2296675" /db_xref="G1:229675" /db_xref="G1:2	ment No. : nt S Loca Mat	US-09-638-693-36 (1-133) x A40639 (1-401) Qy

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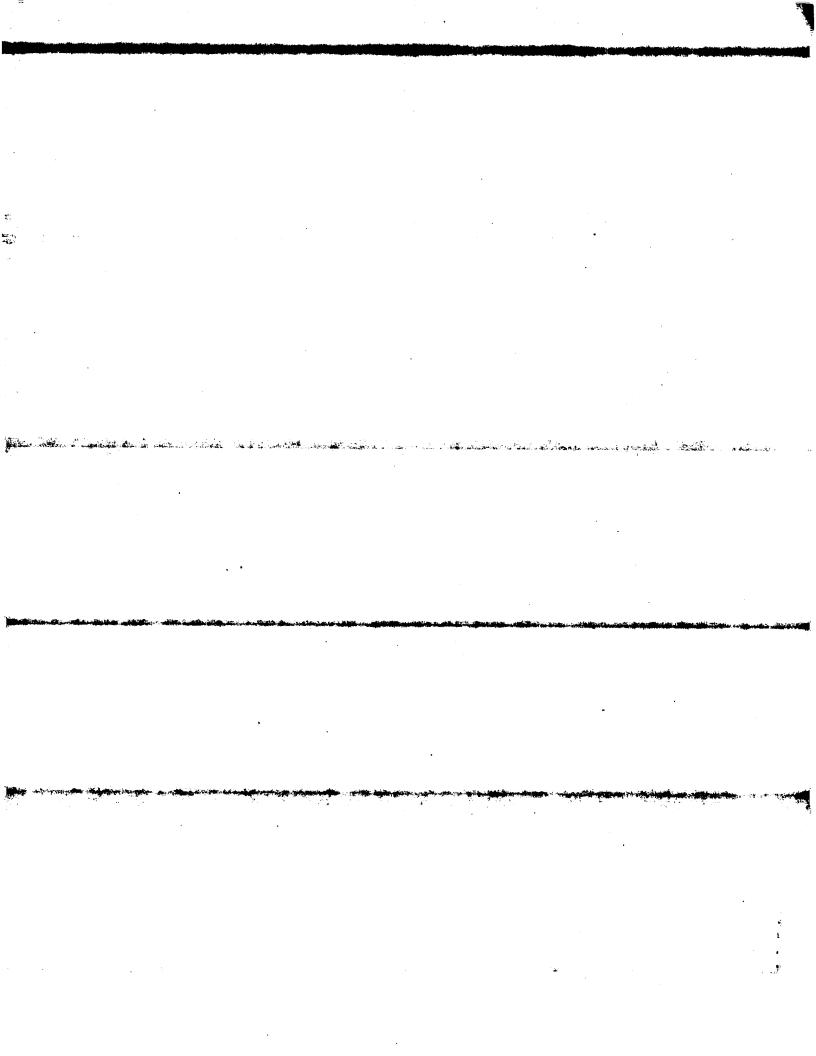
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Sequence 37 from Patent EP0984067.
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                                                                                                                                                             Sequences of hepatitis c virus genotypes and their use as therapeutic and diagnostic agents
Patent: EP 0984067-A 39 08-MAR-2000;
INNOGENETICS NV (BE)
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Patent: JP 200233389-A 19 20-AUG-2002;
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Strandedness: Single;
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Maertens, G. and Stuyver, L.
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243 TCACAAGCTGCCCCATATATCGAACAAGCTCAGGTAATAGCTCACCAGTTCAA-6GAAAA 301
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20-AUG-2002
21-NOV-2001 JP 2001356707
27-APR-1993 EP 93401099.2,05-AUG-1993 EP 93402019.9 PI
MAERTENS,LIEVEN STUYVER
C12N15/09,A61K35/76,A61K38/00,A61K39/00,A61K39/395,A61K39/395,
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1 GlnAsnGluIleCysLeuThrHisProIleThrLysTyrIleMetAlaCysMetSerAla 20
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New sequences of hepatitis C virus genotypes for diagnosis,
prophylaxis
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Maertens, G. and Stuyver, L.
New sequences of hepatitis C virus genotypes for diagnosis,
prophylaxis and therapy
Patent: ~YP 2002233389-A 20 20-AUG-2002;
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SUMMARIES

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22	19	4.	44	15	AAQ78126	ednence
23	19	4	47	15	AAQ78115	atitis C v
24	19	4	99	20	AAX80353	NS4A-NS3
. 25	19	4	99	20	AAX80354	NS4A-
26	19	4	σ	20	AAX80355	NS4A-NS3
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38	19	4.	5	20	AAX80361	NS4A-NS3 C
39	19	4	97	14	AAV05577	0
40	19	4.	41	16	AAT03960	Partial HCV non-st
41	19	4	41	16	AAQ81559	۰ د
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44	19	4.	41	25	AAD49655	epatitis C
45	19	4	41	25	AAL53723	Hepatitis C Virus

RESULT 1 AAQ78040	AAQ78040 standard; cDNA; 401 BP.	AAQ78040;	25-MAR-2003 (updated)	01-AUG-1995 (first entry)	Hepatitis C virus NS3/NS4 region.	Hepatitis C virus; HCV; primer; probe; detection; diagnosis;	classification; immunisation; prophylaxis; serotyping; ss	Hepatitis C virus type 3.	Kev Location/Onalifiers
						probe; detection; diagnosis;	ophylaxis; serotyping; ss.		219

ALIGNMENTS

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                                                                                                                                  RESULT 2
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                                                                                                                                                                               Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (1) the region spanning positions 477-957 of the Core/Fil region of HCV subtype 3a; (ii) the region spanning positions 4684-4730 of the NS3 region of HCV type 3; (iii) the region spanning positions of HCV type 3; (iii) the region spanning positions 8032-8235 of the NS5 region of HCV type 3; (iv) the region spanning positions 8032-8235 of the NS5 region of the BR36 subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by capanist HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the NS3/NS4 aregion of HCV subtype 3a and is taken from a clone designated
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                                                                                                                                                                                                                                    New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
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Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HOV type 3 genomic sequence, more particularly (1) the region spanning positions 417-957 of the Core/El region of HCV subtype 3a; (11) the region spanning positions 4892-5920 of the NS3 region of HCV type 3; (11) the region spanning positions 8023-8235 of the NS5 region of HCV type 3; (11) the region spanning positions 8023-8235 of the NS5 region of HCV subtype 3a; (10) the sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid Polypeptides encoded by
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hepatitis C virus; HCV; primer; probe; detection; diagnosis; classification; immunisation; prophylaxis; serotyping; ss.
363 ACCAACTGGCAAAAGCTTGAGGCCTTTTGGCACAAGCAT 401
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/product= NS3/NS4 polypeptide.
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                                                                                                                                              41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys 60
                                                                                GlnAsnGluIleCysLeuThrHisProIleThrLysTyrIleMetAlaCysMetSerAla
                                                                                         detection; diagnosis;
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classification; immunisation; prophylaxis; serotyping; ss.
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                            Percent Similarity:
Best Local Similarity:
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       Alignment Scores:
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                                                                                                                   compositions comprising at least 5, and pref. 8 or more contiguous nuclectides selected from an HGV type 3 genomic sequence, more particularly (1) the region spanning positions 417-957 of the Core/F1 region of HCV subtype 3s, (1i) the region spanning positions 4892-5292 of the NS3 region of HCV type 3; (ii) the region spanning positions 892-5292 of the NS3 region of HCV type 3; (ii) the region spanning positions 8023-8235 of the NS5 region of the BR36 subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic solate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the NS3/NS4
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                                                                                                                                                                                                                                                                                                                                                                                                             region of HCV subtype 3a and is taken from a clone designated BR36-20-165.
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HCV; NS-5;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by
                            HCV sequence used as hybridisation probe in identification method.
                                                                                                                                                                                                                                                                                                                    New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
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                                               Hepatitis C virus; HCV; primer; probe; detection; diagnosis; classification; immunisation; prophylaxis; serotyping; ss.
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                              sValLeuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaValIleGluProIleValTh
41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
                                                                                                                                                                                                                                                                    ProAlaIleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys
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virus – for diagnosing and treating HCV infection, screening
blood samples and identifying different HCV types
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(first entry)
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P-PSDB; AAR37937.
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Percent Similarity:
Best Local Similarity:
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                                                                                                                                                                               Alignment Scores:
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23-SEP-1993
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DB:
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                                                                                                                                                                                                                           TyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIleGluGlnAla
                                                                                                                                ThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluValThrThrSerThrTrpVal
                                                                                                                                                                                                                                                                                                                                                                        Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3; ss.
type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and region between type 3 and type 1 sequences.
                                                             367
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                                      Sequence 367 BP; 95 A; 93 C; 101 G; 78 U; 0 other;
                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
                region between type 3 and type 1 sequences. (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                  Gaps:
                                                                                                                                                                                                                                                                                                                                                         HCV NS4 coding region from donor T0040.
                                                                                                                 US-09-638-693-36 (1-133) x AAQ43111 (1-367)
                                                                                                                                                                                                                                                                CAGGUGAUAGCCCACCAGUUCAAG 277
                                                                                                                                                                                                                                                        GlnValileAlaHisGlnPheLys 98
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2..367
/*tag= a
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88.00
100.00%
100.00%
66.17%
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P-PSDB; AAR37932.
                                                                                                                                                                                                                                                                                                                                                                                             Hepatitis C virus.
                                                                                    Similarity:
                                                                            Percent Similarity:
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24-JUN-1992;
                                                     Alignment Scores:
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23-SEP-1993
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                                                                                            Query Match:
                                                                                    Best Local
                                                              Pred. No.:
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The sequences given in AAQ43106-111 show bases 4911-5277 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the Analysis of the region of the existance of three distinct groups of HCV. HCV genome revealed the existance of three distinct groups of HCV.

Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 3 and type 1 sequences.

(Updated on 25-MAR-2003 to correct PN field.)
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DNA encoding antigenic peptide(s) of new types of hepatitis (virus – for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
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88
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (1-367)
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3..355
/*tag= a
                                                                                                            Disclosure; Fig 9a; 120pp; English.
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88.00
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100.008
66.178
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(first entry)
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The sequences given in AAQ43106-111 show bases 4911-5277 of the NS4 and a consensus sequence. Analysis of this and other regions of the HCV and a consensus sequence. Analysis of three distinct groups of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type I and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type I and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LeuLeuGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeuSerValGlyCysValVal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DNA encoding antigenic peptide(s) of new types of hepatitis C virus – for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
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87
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Mismatches:
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                                                                          HCV NS4 coding region from donor T0038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-638-693-36 (1-133) x AAQ43107 (1-365)
                                                                                                                                                                              Location/Qualifiers
3..365
/*tag~ a
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92GB-0013362.
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                                (updated)
(first entry)
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52.00
97.75%
97.75%
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                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1993-182554/22.
                                                                                                                                                  Hepatitis C virus.
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                                                                                                                                                                                                                                                                                                20-NOV-1992;
                                                                                                                                                                                                                                      WO9310239-A2
                                                                                                                                                                                                                                                                                                                            21-NOV-1991;
24-JUN-1992;
                              25-MAR-2003
23-SEP-1993
                                                                                                                                                                                                                                                                   27-MAY-1993.
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    AAQ43107;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The sequences given in AAQ43106-111 show bases 4911-5277 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    123 UGCGUUGUGAUUGUGGGCCAUAUUGAGCUGGGGGGCAAGCCGGCACU-CGUUCCAGACAA 181
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sGluValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIl 87
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       being phylogenetically different to type 1 and 2. The same differentiation was noted in the NS-5 (see AAR37923-26) and core between type 3 and type 1 sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CysValValIleValGlyHisIleGluLeuGlyGlyLysProAlaIle-ValProAspLy
                                                                                                                                                                                                                                   DNA encoding antigenic peptide(s) of new types of hepatitis of virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           355
90
0
1
2
0
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Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       region between type 3 and type 1 sequences. (Updated on 25-MAR-2003 to correct PN field.)
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                                                                                                                                 (COMM-) COMMON SERVICES AGENCY
                                                                                                                                                                Yap PL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 355 BP; 94 A; 93 C;
                                                                                       91GB-0024696.
92GB-0013362.
                                                           92WO-GB02143
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97.83%
97.83%
41.35%
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Best Local Similarity:
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WO9310239-A2
                                                           20-NOV-1992;
                                                                                       21-NOV-1991;
                                                                                                    24 - JUN-1992;
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Pred. No.:
                              27-MAY-1993
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           degree
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90
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ID AAQ4
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Sequence 401 BP; 106 A; 108 C; 104 G; 83 T; 0 other;
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52.00
97.75%
97.75%
39.10%
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                                                     Percent Similarity:
Best Local Similarity:
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01-AUG-1995
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                        Alignment Scores:
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                                                                              Query Match:
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AAQ78039
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                                         compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (i) the region spanning positions 417-957 of the Core/El region of HCV subtype 3a; (iii) the region spanning positions 6464-4730 of the NS3 region of HCV type 3; (iii) the region spanning positions 8022-5292 of the NS34 region of HCV type 3; (iii) the region spanning positions 8023-8235 of the NS5 region of HCV type 3; (iv) the BR36 subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the N33/NS4 region of HCV subtype 3a and is taken from a clone designated
IleValGlyHisIleGluLeuGlyGlyLySProAlaIle-ValProAspLysGluValLe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
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                                                                                      aGlnValileAlaHisGlnPheLys 98
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                                                                                                                                                                                                                                Hepatitis C virus NS3/NS4 region.
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2; Page 122-123; 404pp; English.
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                                                                                                                                                                                                                                                     DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
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Conservative:
Mismatches:
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                                                                            (COMM-) COMMON SERVICES AGENCY
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91GB-0024696.
92GB-0013362.
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261 CCACCAGUUCAAG 273
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                                                                                                                                                                           WPI; 1993-182554/22.
P-PSDB; AAR37935.
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Best Local Similarity:
                       24-JUN-1992;
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261 CCACCAGUUCAAG
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                                                                                 RESULT
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                                               Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
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Matches:
Conservative:
Mismatches:
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NS4 coding region from donor T1787
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 9a; 120pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                              (COMM-) COMMON SERVICES AGENCY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Yap PL;
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92GB-0013362.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1993-182554/22.
P-PSDB; AAR37936.
                                                                                                                                Hepatitis C virus.
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                                                                                                                                                                                   WO9310239-A2
                                                                                                                                                                                                                                                                                             20-NOV-1992;
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24-JUN-1992;
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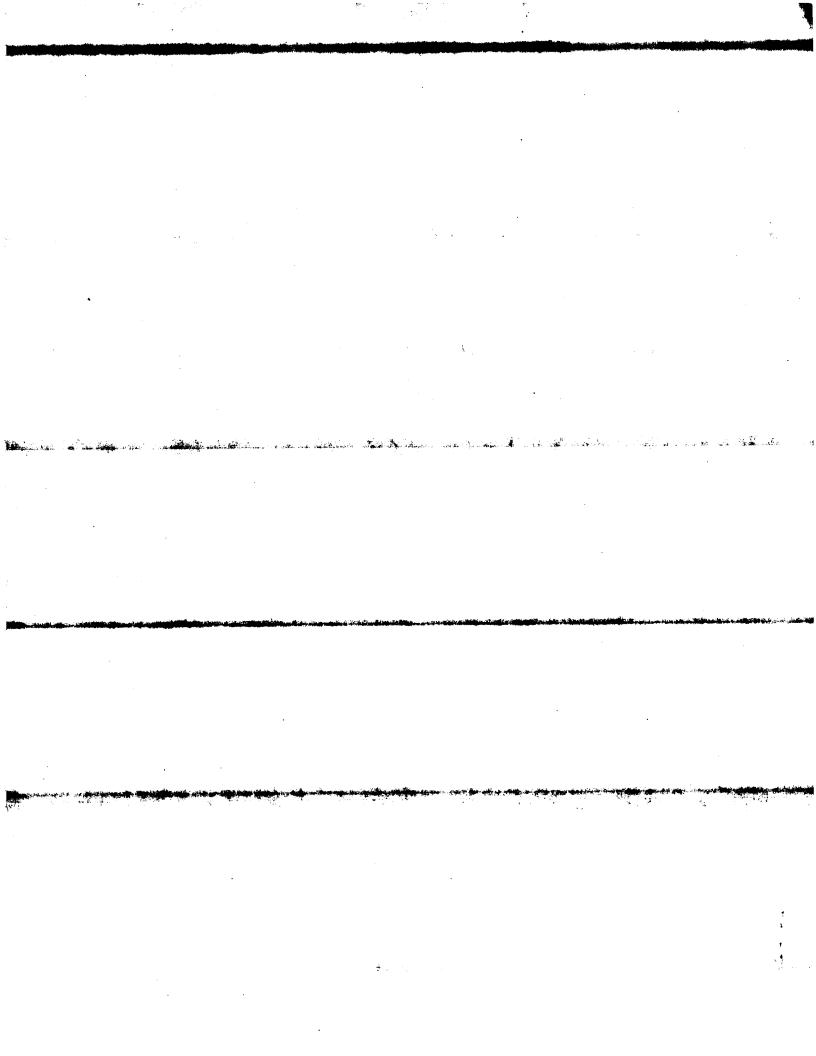
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1330 GGGGCAAGCCGGCAATCGTTCCAGACAAAGAGGTGTTGTATCAACAATACGATGAGATG 1389
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                                                                                                                                                                                                                                 Hepatitis C virus; NS3/4a antigen; multiple epitope fusion antigen; HCV infection; MEFA 12; ds.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Immunoassay solid support useful for detecting hepatitis C virus infection in a biological sample, comprises at least one of HCV anti-core antibody and HCV NS3/4a epitope, bound to the support
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Chien DY, Arcangel P, Tandeske L, George-Nasciemento C,
Medina-Selby A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product= "MEFA 12 protein"
/transl_except= (pos:943..945, aa:Ile)
/transl_except= (pos:1938..1940, aa:Asp)
                                                                                                                                                                           Multiple epitope fusion antigen (MEFA) 12 encoding DNA
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AAD29796 standard; DNA; 2499
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                                                                                                                                                                                                                                                                                                                                                                                             The present invention relates to a new immunoassay solid support consisting essentially of at least one hepatitis C virus (HCV) NS3/4a conformational epitope and a multiple epitope fusion antigen (MEFA), bound to the support. The NS3/4a conformational epitope and a multiple epitope disconsisting and/or support. The NS3/4a conformational epitope and a biological sample from an HCV-infected individual. The immunoassay of the invention is useful for detecting hepatitis C virus infection in a biological sample. The method of the invention provides a sensitive, accurate diagnostic and prognostic tool to provide adequate patient care and to prevent transmission of HCV by blood and by blood products, or by personal contact. Use of NS3/4a conformational epitope in combination with MEFA, provides a sensitive and reliable method for detecting early carry provides a sensitive and reliable method for detecting early masking problems, improving sensitivity in detecting antibodies by allowing a greater number of epitopes on a unit surface area of substrate, and improving substrate. Detection accuracy is increased and
       Hepatitis C virus; HCV; NS3/4a conformational epitope; seroconversion; immunoassay solid support; multiple epitope fusion antigen; MEFA; non-structural protein; gene; ds.
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/note= "This sequence lacks a stop codon"
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P-PSDB; AAU76378.
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2302 GAAGAGTGCTCACAAGCTGCCCCATATATCGAACAAGCTCAGGTAATAGCTCACCAGTTC 2361
the incidence of false results is reduced because of the identification and the use of highly immunogenic HCV antigens which are present during the early stages of HCV seroconversion. The present nucleic acid sequence encodes the HCV multiple epitope fusion antigen (MEFA) 7.1 of the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Immunoassay solid support; Hepatitis C Virus type-1; HCV-1; HCV-2; MS3/4a conformational epitope; multiple epitope fusion antigen 7.1; MEFA 7.1; anti-HCV antibody; NS3/4a conformational antigen, HCV-3; HCV infection; Hepatitis C Virus type-2; Hepatitis C Virus type-7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA encoding HCV multiple epitope fusion antigen 7.1 (MEFA 7.1).
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Chimeric - Hepatitis C virus type 2.
Chimeric - Hepatitis C virus type 3.
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ARCANGEL P.
TANDESKE L.
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                                                                                                                                                                                                                           Percent Similarity:
                                                                                                                       Sequence 3297
                                                                                                                                                              Alignment Scores:
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                                                                                 invention
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(MEDI/) MEDINA-SELBY A.

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The present invention relates to immunoassays comprising Hepatitis C Virus (HCV) NS3/4a conformational epitope and multiple epitope fusion antigen (WERA), bound to a solid support. The NS3/4a epitope and/or the multiple epitope and/or support in a biological sample from an HCV infected individual. The Immunoassays and methods of the invention are useful for detecting HCV infection in a biological sample. The inventive immunoassay solid support provides a sensitive and reliable method for detecting early HCV seroconversion. The assays can detect HCV infection caused by any six known genotypes of HCV. The use of the multiple epitope fusion proteins decreases masking problems, improves sensitivity in detecting antibodies by allowing a greater number of epitopes on a unit area of substrate, and improves selectivity. The present sequence of substrate, and improves selectivity. The present sequence of substrate, and improves selectivity. The present sequence of substrate and improves selectivity. The present sequence of substrate and improves selectivity in detecting mutant HCV polyprotein derived from various regions of HCV type 1,
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                                Tandeske L, George-Nascimento C, Coit D;
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Matches:
Conservative:
Mismatches:
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Job time : 243 secs
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Medina-Selby A;
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0. Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/244,116B
FILING DATE: 15-JUL-1994
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Simmonds, Peter
APPLICANT: Chan, Shiu-Wan
APPLICANT: Chan, Shiu-Wan
APPLICANT: Tap, Peng L.
TITLE OF INVENTION: Hepatitis-C Virus Testing
NUMBER OF SEQUENCES: 53
CORRESPONDENSES:
ADDRESSEE: ABLIL Seltzer, Park & Gibson, P.A.
STREET: 1211 East Morehead Street
CITY: Charlotte
STATE: Wo. 5763159th Carolina
COUWRY: United States
US-09-198-723A-104
US-09-198-723A-105
US-09-198-723A-106
US-09-198-723A-107
US-09-198-723A-108
US-09-198-723A-108
US-09-198-723A-111
US-08-124-977-311
US-08-324-977-311
US-08-324-977-113
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Charlotte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-263-933-1
US-09-263-933-8
US-09-263-933-15
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APPLICATION NUMBER: PCT/GB92/02143
FILING DATE: 20-NOV-1992
ATTORNEY/AGENT INFORMATION:
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REGISTRATION NUMBER: 31,665
REFERENCE/DOCKET NUMBER: 1749-125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 16, Application US/08244116B Patent No. 5763159
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TELEPHONE: 704-377-1561
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13910
       US-08-244-116B-16
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       -MODEL-frame+_promodel -DEV-x1h
-Q-/cgn2_1/USPTO_spool/US09638693/runat_25082003_173341_22313/app_query.fasta_1.327
-Q-/cgn2_1/USPTO_spool/US09638693/runat_25082003_173341_22313/app_query.fasta_1.327
-DB-Issued_Patents_NA -OPMT-fastap -SUFFIX-oli.rni -MINAM-TH-0.1 -LOOPCIL-0
-LOOPEXT-0 -UNITS-bits -START-1 -END--1 -MATRIX-oligo -ITRANS-human40.cdi
-LIST-45 -DOCALIGN-200 -THR_SCORE-quality -THR_MIN-1 -ALIGN-15 -MODE-LOCAL
-OUTFMT-pto -NORM-ext -HEAPSIZE-500 -MINLEN-0 -MAXLEN-200000000
-USBR-US0938633_CGN1_1_55_6_frunat_2508200_3.173341_22313 -NCPU-6 -ICPU-3
-NO MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -DSPBLOCK-100 -LONGLOG
-DEV_TIMEOUT-120 -WARN_IIMEOUT-30 -THREADS-1 -XGAPOD-60 -XGAPEXT-60 -FGAPOP-6
-FGAPEXT-7 -YGAPOP-60 -YGAPEXT-60 -DELEXT-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 43, Appl
Sequence 43, Appl
Sequence 43, Appl
Sequence 116, App
Sequence 117, App
Sequence 118, App
Sequence 118, App
Sequence 119, App
Sequence 120, App
Sequence 120, App
Sequence 120, App
Sequence 120, App
                                                                                                                                                                                                 (without alignments)
1012.137 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 16,
                                                                                                                                                                                                                                                                                                                         QNEICLTHPITKYIMACMSA......VIEPIVTTNWQKLEAFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Description
                                                                                                                                                                         ; Search time 58 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1: /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/2/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/2/ina/6A_COMB.seq:*
4: /cgn2_6/ptodata/2/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/2/ina/PCTUS_COMB.seq:*
6: /cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
                       GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd

    nucleic search, using frame_plus_p2n model

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US-08-344-616-43
US-08-904-686A-43
US-09-315-850-43
US-09-198-723A-117
US-09-198-723A-117
US-09-198-723A-117
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US-09-198-723A-120
US-09-198-723A-102
US-09-198-723A-103
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-244-116B-16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Minimum DB seq length: 0
Maximum DB seq length: 200000000
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Match 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        74 rAspGluMetGluGluCysSerGlnAlaAlaProTyrIleGluGlnAlaGlnValIleAl 94
                                                                                                                                                                                                                                                                                                                                                                                                                           35 ValLeuAlaAlaLeuAlaAlaTyrCysLeuSerValG1yCysValValIleValG1yHis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: OKAYAMA, HIroto
APPLICANT: FUKE, Isao
APPLICANT: FUKE, Isao
APPLICANT: ARAMIZAMA, Akahisa
APPLICANT: TAKAMIZAMA, Akahisa
APPLICANT: TAKAMIZAMA, Akahisa
APPLICANT: TOSHIDA, Iwao
TITLE OF INVENTION: CDNA AND ANTIGEN POLYPEPTIDE
NUMBER OF SEQUENCES: 50
CORRESPONDENCE ADDRESS:
ADDRESSE: Armstrong, Westerman, Hattori, McLeland & Andresser.
                                                                                                                                                                                                                       Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS, Version 5.0
                                                                                                                                                                                                                                                                                                                                   US-09-638-693-36 (1-133) x US-08-244-116B-16 (1-367)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Diskette, 3.5 in, 1.44Mb
                                                                                                                                                                                                                                                                                                         Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 1725 K St. N.W. Suite 1000
Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/324,977
FILING DATE: 18-CCT-1994
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 43, Application US/08324977 Patent No. 5747339 GENERAL INFORMATION:
                                                                                                                                                           Hepatitis-C virus
   16:
                                                                                                                                                                                                                      1.83e-40
48.00
97.65$
97.65$
36.09$
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    265 CCACCAGUUCAAG 277
                             LENGTH: 367 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94 aHisGlnPheLys 98
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Naughton
                                                                           TOPOLOGY: linear
MOLECULE.TYPE: CDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  U.S.A.
                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                         ORIGINAL SOURCE:
ORGANISM: Hep
US-08-244-116B-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
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                                                                                                                                                                                                       Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-324-977-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
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DB:
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APPLICANT: OKAYAWA, Hiroto
APPLICANT: FUKE, Isao
APPLICANT: MORI, Chisato
APPLICANT: TAKANIZAWA, Akahisa
APPLICANT: TAKANIZAWA, Akahisa
APPLICANT: YOSHIDA, Iwao
TITLE OF INVENTION: NON-A, NON-B HEPATITIS VIRUS GENOMIC
TITLE OF INVENTION: CDNA AND ANTIGEN POLYPEPTIDE
NUMBER OF SEQUENCES: 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Armstrong, Westerman, Hattori, McLeland
ADDRESSEE: Naughton
STREET: 1725 K St. N.W. Suite 1000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "sequence = 5178 - 5918
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Matches:
Conservative:
Mismatches:
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                                                                                          PRICATION DATA:
APPLICATION NUMBER: JP 2-305605
FILING DATE: 09-NOV-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/099,706
FILING DATE: 30-JUL-1993
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 07/769,996
FILING DATE: 02-OCT-1991
                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07/635,451

FILING DATE: 28-DEC-1990

ATTORNEY/AGENT INFORMATION:
NAME: Stevens-Smith, Theresa M.
REGISTRATION NUMBER: 36,281

REGISTRATION NUMBER: 900703D

TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 100597

TELECOMMUNICATION COURTED 100597

TELECOMMUNICATION TO 100597
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: CDNA from genomic RNA FEATURE:
FILING DATE: 25-JUN-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-230921
FILING DATE: 31-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 43, Application US/08384616; Patent No. 5847101; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note: "seq
SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: misc_feature
LOCATION: 1..741
OTHER INFORMATION: /note:
OTHER INFORMATION: SEQ II
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1.26e-10
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100.00%
14.29%
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TYPE: nucleic acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-324-977-43
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APPLICANT: MORI, Chisato
APPLICANT: TAKANIZAMA, Akahisa
APPLICANT: TAKANIZAMA, Akahisa
APPLICANT: YOSHIDA, Iwao
TITLE OF INVENTION: NON-A, NON-B HEPATITIS VIRUS GENOMIC
TITLE OF INVENTION: CDNA AND ANTIGEN POLYPEPTIDE
TITLE OF INVENTION: CDNA AND ANTIGEN POLYPEPTIDE
CORRESPONDENCES: 50
CORRESPONDENCE ADDRESS:
ADDRESSE: Armstrong, Westerman, Hattori, McLeland &
ADDRESSEE: Naughton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: 1..741
OTHER INFORMATION: /note: "sequence = 5178 - 5918 of
OTHER INFORMATION: SEQ ID NO: 1"
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Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                             COMPUTER READBLE FORM:
MEDIUM TYPE: Diskette, 3.5 in, 1.44Mb
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS, Version 5.0
SOFTWARE: ASCII
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
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PAPLICATION NUMBER: US/08/904,686A
FILING DATE: 01-40G-1997
PRIOR APPLICATION DATA:

PRIOR APPLICATION DATA:

PRIOR APPLICATION DATA:

PRIOR APPLICATION NUMBER: US 08/324,977
FILING DATE: 18-0CT-1994

PRIOR APPLICATION DATA:

PRIOR APPLICATION NUMBER: US 07/635,451

FILING DATE: 28-DEC-1990

ATTORNEY/AGENT INFORMATION:

NAME: MCLELAND, LECHNORY

REGISTRATION NUMBER: 31,541

REFERENCE/DOCKET NUMBER: 31,541

REFERENCE/DOCKET NUMBER: 31,541

REFERENCE/DOCKET NUMBER: 31,541

REFERENCE/DOCKET NUMBER: 31,541

TELEPHONE: (202) 659-2930

TELEPHONE: (202) 687-0357

TELEPHONE: (202) 687-0357

TELEPHONE: (202) 887-0357

TELEPHONE: (202) 887-0357
                                                                                                                                                                                                                        F: 1725 K St. N.W. Suite 1000 Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: CDNA from genomic RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1.26e-10
19.00
100.00%
100.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 741 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                      COUNTRY: U.S.A. ZIP: 20006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: nucleic STRANDEDNESS:
                                                                                                                                                                                                                                                                              D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JS-08-904-686A-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                  STREET:
                                                                                                                                                                                                                                                                            STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note: "sequence = 5178 - 5918
SEQ ID NO: 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative:
Mismatches:
Indels:
                                                                                                                       MEDIUM TYPE: Diskette, 3.5 in, 1.44Mb
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS, Version 5.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-638-693-36 (1-133) x US-08-384-616-43 (1-741)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps:
                                                                                                                                                                                                                                                                                         CLASSIFICATION: 424

PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/769,996
FILING DATE: 25-UNV-1991
APPLICATION NUMBER: JP 2-167466
FILING DATE: 25-UNV-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-230921
FILING DATE: 31-AGG-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-305605
FILING DATE: 09-NOV-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/635,451
FILING DATE: 28-DEC-1990
ATTORNEY/AGENT INFORMATION:
REGISTRATION NUMBER: 36,281
REGISTRATION NUMBER: 36,281
REGISTRATION NUMBER: 36,281
TELEPHONE: (202) 659-2930
TELEFAX: (202) 887-0357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear _ MOLECULE TYPE: CDNA from genomic RNA
                                                                                                                                                                                                SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/384,616
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-008-904-686A-43
Sequence 43, Application US/08904686A
Patent No. 5998130
GENERAL INFORMATION:
APPLICANT: OKAYAMA, HITOLO
APPLICANT: FUKE, ISAO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEX: 440142
INFORMATION FOR SEQ ID NO: 43:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.26e-10
19.00
100.00%
100.00%
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: nucleic acid
STRANDEDNESS: single
                                                                                             COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LOCATION: 1..741
OTHER INFORMATION:
OTHER INFORMATION:
  Washington
                          : D.C.
RY: U.S.A.
20006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score:
Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : NAME/KEY: CDS
; LOCATION: 1...7
US-08-384-616-43
                                                                                                                                                                                                                                                                              FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alignment Scores:
Pred. No.:
                                              COUNTRY:
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MOLECULE TYPE: cDNA from genomic RNA
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                                                                                                                                                                                                                                                        Alignment Scores:
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9
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                                                                                                                                                                                                                                                                                                     Score:
                                                                                                                                                                                                                                                                           Pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                Sequence 43, Application US/09315850
Patent No. 6217872
GENERAL INFORMATION:
APPLICANT: OKAYAMA, Hiroto
APPLICANT: FUKE, ISAO
APPLICANT: TAKAMIZAMA, Akahisa
APPLICANT: TAKAMIZAWA, Akahisa
APPLICANT: TAKAMIZAWA, Akahisa
APPLICANT: OKSHIDA, IWAO
TITLE OF INVENTION: NON-A, NON-B HEPATITIS VIRUS GENOMIC
MINDER OF ENDINGENERAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 50
CORRESPONDENCE ADDRESS:
ADDRESSEE: Armstrong, Westerman, Hattori, McLeland &
ADDRESSEE: Naughton
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 in, 1.44Mb
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS, Version 5.0
SOFTWARE: ASCII:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/315,850
                                     US-09-638-693-36 (1-133) x US-08-904-686A-43 (1-741)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/904,686
FILING DATE: 01-A0C-1997
APPLICATION NUMBER: US 08/324,977
FILING DATE: 18-OCT-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-167466
FILING DATE: 25-UNN-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 2-330921
FILING DATE: 31-AUG-1990
PRIOR APPLICATION NUMBER: JP 2-305605
FILING DATE: 09-NOV-1990
PRIOR APPLICATION NUMBER: US 08/099,706
APPLICATION NUMBER: US 08/099,706
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PELICATION NUMBER: US 08/099,706
FILING DATE: 30-JUL-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/769,996
FILING DATE: 02-OCT-1991
PRIOR APPLICATION NUMBER: US 07/635,451
FILING DATE: 28-DEC-1990
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 1725 K St. N.W. Suite 1000 CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: MCLELAND, LE-NNUNG
REGISTRATION NUMBER: 31,541
REFERENCE/DOCKET NUMBER: 9007
TELECOMMUNICATION INFORMATION:
TELEPAN: (202) 659-2930
TELEPAN: (202) 887-0357
INFORMATION FOR SEQ ID NO: 43:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 741 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Washington STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: U.S.A. ZIP: 20006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                               US-09-315-850-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
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6 LeuThrHisProlleThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluVal 24
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APPLICANT: Malcolm, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
APPLICANT: Yeo, Nanhua
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
                                         /note: "sequence = 5178 - 5918 of
SEQ ID NO: 1"
                                                                                                                                                                                                                                                 Conservative:
                                                                                                                                                                                                                                                                                                                                                   US-09-638-693-36 (1-133) x US-09-315-850-43 (1-741)
                                                                                                                                                                                                                                                                      Mismatches:
                                                                                                                                                                                                         Length:
Matches:
                                                                                                                                                                                                                                                                                         Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM: 8.0.1
SOFTWARE: Microsoft Word 6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-198-723A-116
; Sequence 116, Application US/09198723A
; Patent No. 6211338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: Schering-Plough Corp. STREET: 2000 Galloping Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: JBO8
TELECOMMUNICATION INFORMATION:
TELEPHONE: (908)298-5056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
                                                                                                                                                                                                     1.26e-10
19.00
100.00%
100.00%
NAME/KEY: misc_feature
LOCATION: 1..741
OTHER INFORMATION: /note
OTHER INFORMATION: SEQ II
FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 1941 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (908)298-5388
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nucleic acid .
EDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1..1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Kenilworth
STATE: New Jersey
COUNTRY: USA
                                                                                                                                                                                                                                                                 Best Local Similarity:
Query Match:
DB:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                  ; NAME/KEY: CDS
; LOCATION: 1...
US-09-315-850-43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: nucleic STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                 Percent Similarity:
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STATE: New COUNTRY: US
                     RESULT 8
US-09-198-723A-118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-198-723A-119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LOCATION:
                                                                                                                                                      1876 CTCACCCACTCATAACCAAATACATGGCATGCATGTCGGCCGACCTGGAGGTC 1932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6 LeuThrHisProlleThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluVal 24
                                                                                                                                                                                                                                                                                                               APPLICANT: Malcolm, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Webr, Patricia
APPLICANT: Yao, Nanhua
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
CORRESPONDENCE ADDRESS:
 Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                       US-09-638-693-36 (1-133) x US-09-198-723A-116 (1-1941)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-638-693-36 (1-133) x US-09-198-723A-117 (1-1941)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
OPERATING SYSTEM: 8.0.1
SOFTWARE: Microsoft Word 6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
                                                                                          Gaps:
                                                                                                                                                                                                                                                              Sequence 117, Application US/09198723A; Patent No. 6211338; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Schering-Plough Corp. STREET: 2000 Galloping Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JB0800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFRENCE/DOCKET NUMBER: JB08
TELECOMMUNICATION INFORMATION:
TELEFHONE: (908)298-5056
TELEFAX: (908)298-5056
INFORMATION FOR SEQ ID NO: 117:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.12e-10
19.00
100.008
100.008
3.12e-10
19.00
100.00%
100.00%
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleic acid
EDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1..1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New Jersey
: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Kenilworth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                  Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
                                                                                                                                                                                                                                                US-09-198-723A-117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07030
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COUNTRY:
                                                                      Query Match:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match:
                                                                                                                                                                                                                                RESULT 7
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Sequence 118, Application US/09198723A
Patent No. 6211338
GENERAL INFORMATION:
APPLICANT: Malcolin, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
APPLICANT: Yao, Nanhua
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 119, Application US/09198723A

Patent No. 6211338

GENERAL INFORMATION:
APPLICANT: Malcolm, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
APPLICANT: Yao, Nanhua
APPLICANT: Yao, Nanhua
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-638-693-36 (1-133) x US-09-198-723A-118 (1-1941)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/09/198,723A FILLING DATE: 24 NOV 1998 CLASSIFICATION:
                                                                                                                                                                                                                                                       ADDRESSEE: Schering-Plough Corp. STREET: 2000 Galloping Hill Road
                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power MacLitcsh
OPPERATING SYSTEM: 8.0.1
SOFTWARE: MICTOSOFT WORD 6.0.1
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41.211.
REFERENCE/DOCKET NUMBER: JB08
TELECOMUNICATION INFORMATION:
TELEPHONE: (908)298-5388
TELEPHONE: (908)298-5388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (908)298-5388
INFORMATION FOR SEQ ID NO: 118:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3.12e-10
19.00
100.008
100.008
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TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                  Kenilworth
New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1..1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Percent Similarity:
Best Local Similarity:
Query Match:
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                                                                                                                                                                                                                                                                                                                                               USA
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SOFTWARE: Microsoft Word 6.0.1 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                 TOPOLOGY: linear
MOLECULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: Kenilworth
STATE: New Jersey
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                       ; NAME/KEY: CDS
; LOCATION: 1..1941
US-09-198-723A-120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Percent Similarity:
Best Local Similarity:
Query Match:
                                                                            CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07030
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 120, Application US/09198723A

Sequence 120, Application US/09198723A

Sequence 120, Application US/09198723A

GENERAL INFORMATION:

APPLICANT: Malcoln, Bruce

APPLICANT: Taremi, Shahriar S.

APPLICANT: Yao, Nanhua

TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide

TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide

CORRESPONDENCE ADDRESS:

ADDRESSEE: Schering-Plough Corp.

STREET: 2000 Galloping Hill Road

CITY: Kenilworth

STATE: New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-638-693-36 (1-133) x US-09-198-723A-119 (1-1941)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintcsh
OPERATING SYSTEM: 8.0.1
SOFTWARE: Microsoft Word 6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41.211
REFERENCE/DOCKET NUMBER: JB0800
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECHONE: (908)298-5056
TELECHONE: (908)298-5056
TELECHONE: (908)298-5056
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps:
                                    E: Schering-Plough Corp. 2000 Galloping Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: POWER MACINICSh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3.12e-10
19.00
100.00%
100.00%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH: 1941 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: 8.0.1
   NUMBER OF SEQUENCES: 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: single
                     CORRESPONDENCE ADDRESS:
                                                       STREET: 2000 Gallog
CITY: Kenilworth
STATE: New Jersey
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1..1941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME/KEY: CDS
                                                                                                                             07030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-198-723A-119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-198-723A-120
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                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alignment Scores:
Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match:
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GENERAL INFORMATION:
APPLICANT: Malcolm, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
APPLICANT: Yao, Nanhua
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: N33 Protease and NS4A Cofactor Peptide
NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-638-693-36 (1-133) x US-09-198-723A-120 (1-1941)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches:
Indels:
APPLICATION NUMBER: US/09/198,723A FILING DATE: 24 NOV 1998
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
                                                     ATTORNEY/AGENT INFORMATION:
NAME: MCLAUGhlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: 150800
TELECOMMUNICATION INFORMATION:
TELEPHONE: (908,298-5056
TELEPAX: (908,298-538
INFORMATION FOR SEQ ID NO: 120:
SEQUENCE CHARACTERISTICS:
LENGTH: 1941 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: MCLABUGHLIN, JAYE P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: JB0800
TELEPONNUN: (908)298-5056
TELEPHONE: (908)298-5388
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-198-723A-102
; Sequence 102, Application US/09198723A
; Patent No. 6211338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              E: Schering-Plough Corp. 2000 Galloping Hill Road
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
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100.00%
100.00%
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Conservative: Mismatches:

Indels:

Matches:

Length:

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Sequence 101, Application US/09198723A

Patent No. 6211338
GENERAL INFORMATION:
APPLICANT: Malcolin, Bruce
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
APPLICANT: Wao, Nanhua
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
                                                                                                                                                                     US-09-638-693-36 (1-133) x US-09-198-723A-103 (1-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
OPERATING SYSTEM: 8 0.1
SOFTWARE: Microsoft Word 6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Schering-Plough Corp. STREET: 2000 Galloping Hill Road CITY: Kenliworth STATE: New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: JB0800
TELECOMMUNICATION INPORMATION:
TELEPHONE: (908)298-5056
                                                              100.00%
100.00%
14.29%
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100.00%
14.29%
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INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
LENGTH: 1998 base pairs
                                                9.00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: CDS
LOCATION: 1..1998
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Best Local Similarity:
Query Match:
                                                                Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07030
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                                                                                                                                                                                                                                                                                                           US-09-198-723A-104
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      Alignment Scores:
                                                                                                        Query Match:
                           Pred. No.:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6 LeuThrHisProlleThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluVal 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Taremi, Shahriar S.
APPLICANT: Taremi, Shahriar S.
APPLICANT: Weber, Patricia
APPLICANT: Weber, Patricia
APPLICANT: Weber, Patricia
APPLICANT: Weber, Patricia
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
NUMBER OF SEQUENCES: 123
CORRESPONDENCE ADDRESS:
ADDRESSEE: Schering-Plough Corp.
STREET: 2000 Galloping Hill Road
CITY: Kenilworth
STATE: New Jersey
                                                                                                                                                                                                                                                                   1998
19
0
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0
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                                                                                                                                                                                                                                                                   Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OPERATING SYSTEM: 8.0.1

SOFTWARE: Microsoft Word 6.0.1

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILING DATE: 24 NOV 1998
CLASSIFCATION:
ATTORNEY/AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: JB0800
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPAX: (908)298-5368
TELEPAX: (908)298-5368
TELEFAX: (108)298-5368
TELEFAX: (109)299-5368
TELEGTH: 1998 base pairs
TYPE: nucleic acid
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-198-723A-103; Sequence: 103, Application US/09198723A; Sequence: 100. 6211338; Patent No. 6211338; GENERAL INFORMATION:
INFORMATION FOR SEQ ID NO: 102:
SEQUENCE CHARACTERISTICS:
LENGTH: 1998 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
                                                                                                                                                                                                                                                                   3.2e-10
19.00
100.00%
100.00%
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; LOCATION: 1..1998
US-09-198-723A-103
                                                                                                                           MOLECULE TYPE: CDNA
                                                                                                          TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linea
                                                                                                                                                                                                                                                                                                        Percent Similarity:
Best Local Similarity:
                                                                                                                                                                 NAME/KEY: CDS
; LOCATION: 1..1
US-09-198-723A-102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07030
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                                                                                                                                                                                                                                                                                                                                                  Query Match:
DB:
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6 LeuThrHisProileThrLysTyrileMetAlaCysMetSerAlaAspLeuGluVal 24
US-09-638-693-36 (1-133) x US-09-198-723A-104 (1-1998)
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Conservative: Mismatches: Indels:

Length: Matches:

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6 LeuThrHisProIleThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluVal 24
TITLE OF INVENTION: NS3 Protease and NS4A Cofactor Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-638-693-36 (1-133) x US-09-198-723A-106 (1-1998)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative:
Mismatches:
Indels:
                                                                                                                                                                           STATE: New Jersex
COUNTRY: USA
ZIP: 07030
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
COMPUTER: Power Macintosh
COMPUTER: Microsoft Word 6.0.1
SOFTWARE: Microsoft Word 6.0.1
SOFTWARE: Microsoft Word 6.0.1
SOFTWARE: APPLICATION NUMBER: US/09/198,723A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Search completed: August 29, 2003, 14:24:24 Job time : 60 secs
                 NUMBER OF SEQUENCE.
CORRESPONDENCE ADDRESS:
ADDRESSEE: Schering-Plough Corp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41,211
REPERENCE/DOCKET NUMBER: JB08
TELECOMMUNICATION INFORMATION:
TELEPHONE: (908)298-5056
TELEFRAX: (908)298-5056
INFORMATION FOR SEQ ID NO: 106:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.00%
100.00%
14.29%
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LENGTH: 1998 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                        Kenilworth
: New Jersey
RY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME/KEY: CDS
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US-09-198-723A-106
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1936 CTCACCCACACATAACCAAATACATCATGGCATGCATGTCGGCTGACCTGGAGGTC 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1936 CTCACCCACTAAACCAAATACATGGATGCATGTCGGCTGACCTGGAGGTC 1992
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                                                                                                          Sequence 105, Application US/09198723A

Patent No. 6211338

GENERAL INFORMATION:
APPLICANT: Malcolm, Bruce
APPLICANT: Weber, Patricia
APPLICANT: Weber, Patr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Tareml, Shahrlar S.
APPLICANT: Weber, Patricia
APPLICANT: Yao, Nanhua
TITLE OF INVENTION: Covalent Complexes of Hepatitis C Virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-638-693-36 (1-133) x US-09-198-723A-105 (1-1998)
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Matches:
Conservative:
Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Microsoft Word 6.0.1
SOFTWARE: Microsoft Word 6.0.1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/198,723A
FILLING DATE: 24 NOV 1998
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: Schering-Plough Corp. STREET: 2000 Galloping Hill Road CITY: Kenilworth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-198-723A-106
; Sequence 106, Application US/09198723A
; Patent No. 6211338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Malcolm, Shahriar S.
APPLICANT: Weber, Patricia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION:
NAME: McLaughlin, Jaye P.
REGISTRATION NUMBER: 41,211
REFERENCE/DOCKET NUMBER: JBG
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (908)298-5056
TELEFAX: (908)298-5388
INFORMATION FOR SEQ ID NO: 105:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: Power Macintosh
OPERATING SYSTEM: 8.0.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: CDNA
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Best Local Similarity:
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US-09-198-723A-105
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Pred. No.:
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Length: Matches:

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Sequence 1, Appli
Sequence 8, Appli
Sequence 15, Appl
Sequence 41, Appl
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33, Appl
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TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
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Sequence 25,
                                                                                                                                                                                                                                                  Seguence 197
                                                               Sequence Sequence 2
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COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/899,046
                                                                                                 US-09-899-046-33
US-09-878-281-33
US-09-881-239-4
US-09-881-654-3
US-09-899-046-29
US-09-878-281-269
US-09-899-046-269
US-09-899-046-269
US-09-899-046-269
US-09-899-046-269
                                    US-09-878-281-37
US-09-878-281-39
US-09-899-046-222
US-09-878-281-222
US-09-899-046-31
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US-09-878-281-197
US-09-878-281-199
US-10-259-275-39
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US-10-309-561-25
US-10-029-907-6
US-10-029-907-7
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US-09-919-901-8
US-09-919-901-15
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LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
INFORMATION FOR SEQ ID NO:
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FILING DATE:
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-MODEL-frame+_prin.model -DEV-xlh
-Q-Cgn2_1/USPTO_spool/US09638693/runat_25082003_173341_22326/app_query.fasta_1.327
-DB-Published_Applications.NA -OFMT-fastap.SUFFIX-011.mpb MINMATCH-0.1
-LOOPEL-0 -LOOPEXT-0 -UNITS-bits -START-1 -END-1 -MATRIX-01160
-TRANS-human40.cdi -LIST-45 -DOCALIGN-200 -THR_SCORE-quality -THR_NIN-1
-ALIGN-15 -MODE-LOCAL -OUTFRT-pto -NORM-ext -HEAPSIZE-500 -MINLEN-0
-MAXLEN-200000000 -USER-US09638693_CGN_11_221_cmnat_25082003_17341_22326
-MOST-0CD-3 -NO_MMAP -LARGEQUERY -NGS_SCORES-0 -WAIT -DSPBLOCK-100
-LONGLOG -DEV_TIMEOUT-120 -WARN_TIMEOUT-30 -THREADS-1 -XGAPOP-60 -XGAPEXT-60
-FGAPOP-6 -FGAPEXT=7 -YGAPOP-60 -YGAPEXT-60 -DELOP-6 -DELEXT=7
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                                                                                   Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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1: /cgn2_6/ptodata/2/pubpna/USO7_PUBCOMB.seq:*
2: /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
3: /cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
4: /cgn2_6/ptodata/2/pubpna/USO6_PUBCOMB.seq:*
5: /cgn2_6/ptodata/2/pubpna/USO6_PUBCOMB.seq:*
6: /cgn2_6/ptodata/2/pubpna/PCTUS_PUBCOMB.seq:*
7: /cgn2_6/ptodata/2/pubpna/USO8_NEW_PUB.seq:*
8: /cgn2_6/ptodata/2/pubpna/USO8_NEW_PUB.seq:*
9: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
10: /cgn2_6/ptodata/2/pubpna/USO8_PUBCOMB.seq:*
10: /cgn2_6/ptodata/2/pubpna/USO9B_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/USO9B_PUBCOMB.seq:*
11: /cgn2_6/ptodata/2/pubpna/USO9B_PUBCOMB.seq:*
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            GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                              OM protein - nucleic search, using frame_plus_p2n model
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Maximum DB seq length: 2000000000
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Match Length DB
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STRANDEDNESS: single
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER REDABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                       21 AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla
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Mismatches:
Indels:
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                                                                                                                             Length:
Matches:
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Publication No. US20030032005A1
GENERAL INFORMATION:
APPLICANT:
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100.00%
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SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
TYPE: nucleic acid
                  HYPOTHETICAL: NO
ANTI-SENSE: NO
IMMEDIATE SOURCE:
CLONE: BR36-20-164
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 linear
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Best Local Similarity:
Query Match:
        MOLECULE TYPE: CD
HYPOTHETICAL: NO
                                                                       ; NAME/KEY: CDS
; LOCATION: 3..4
US-09-899-046-35
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TOPOLOGY:
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
                                                                                                                                                                                                                                                                                                                                    GlnAsnGluIleCysLeuThrHisProIleThrLysTyrIleMetAlaCysMetSerAla
                                                                                                                                                                                                                                                                                                                                                        21 AspleuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                              41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/899,046
FILING DATE:
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Mismatches:
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Matches:
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GENERAL INFORMATION:
APPLICANT:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
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133.00
100.00%
100.00%
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SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
          MOLECULE TYPE: CDN
HYPOTHETICAL: NO
ANTI-SENSE: NO
IMMEDIATE SOURCE:
CLONE: BR36-20-164
linear
                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                         ; NAME/KEY: CDS
; LOCATION: 3...
US-09-878-281-35
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PC-DOS/MS-DOS
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APPLICANT:
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COMPUTER: IBM PC compatible
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                                                                                                                                                                         1.04e-96
98.00
98.51%
98.51%
LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLLOGY: linear
MOLECULE TYPE: CDNA
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                                                       HYPOTHETICAL: NO
ANTI-SENSE: NO
IMMEDIATE SOURCE:
CLONE: BR36-20-165
FEATURE:
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Best Local Similarity:
                                                                                                                  NAME/KEY: CDS
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US-09-899-046-39
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COMPUTER: IBM PC COMPATIBLE
ODFRATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
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APPLICATION NUMBER: 08/362,455
FILING DATE:
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                                                                                                                                                                        98.00
98.51%
98.51%
73.68%
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
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                                                                              CLONE: BR36-20-166
                                                                                                     NAME/KEY: CDS
LOCATION: 3..401
                                            HYPOTHETICAL: NO
ANTI-SENSE: NO
IMMEDIATE SOURCE:
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Mismatches:
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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APPLICATION NUMBER: US/09/878,281
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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APPLICANT:
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98.00
98.51%
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73.68%
         LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
SEQUENCE CHARACTERISTICS
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APPLICATION NUMBER:
FILING DATE:
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CLONE: BR36-20-166
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LOCATION: 3..401
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
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Mismatches:
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APPLICATION NUMBER: US/09/899,046
FILING DATE:
PARDA PAPLICATION DATA:
APPLICATION NUMBER: 08/362,455
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; Publication No. US20030008274Al
; APPLICANT:
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                          LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
 INFORMATION FOR SEQ ID NO:
               SEQUENCE CHARACTERISTICS
                                                                                                                               IMMEDIATE SOURCE:
CLONE: BR36-20-165
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Best Local Similarity:
Query Match:
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CURRENT APPLICATION DATA
PRIOR APPLICATION DATA APPLICATION NUMBER:
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Best Local Similarity:
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MOLECULE TYPE: CD
HYPOTHETICAL: NO
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LOCATION:
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US-09-878-281-222
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIN Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION NUMBER: US/09/878,281
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Publication No. US20030032005A1
GENERAL INFORMATION:
APPLICANT:
            222:
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98.00
98.51%
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73.68%
       INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 629 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
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                                                                                                                                                           NAME/KEY: mat_peptide
LOCATION: 3..629
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LOCATION: 3..629
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Query Match:
                                                                                                    ANTI-SENSE: NO
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Mismatches:
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Matches:
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08/362,455
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APPLICANT:
TITLE OF INVENTION: Genotype
TITLE OF INVENTION: Genotype
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
                                                                                                                                                                                                                                                                                                                                                                       98.00
98.51%
98.51%
73.68%
                                                                    LENGTH: 629 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                     SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                              NAME/KEY: mat_peptide
LOCATION: 3..629
                                  INFORMATION FOR SEQ ID NO:
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LENGTH:
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DB:
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
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Matches:
Conservative:
Mismatches:
Indels:
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 US/09/899,046
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APPLICATION NUMBER: US/09/899,046
FILING DATE:
                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
FILING DATE:
INFORMATION FOR END IN 0: 31:
SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
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Publication No. US20030008274A1
GENERAL INFORMATION:
APPLICANY:
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APPLICATION NUMBER: 08/362,455
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APPLICATION NUMBER:
FILING DATE:
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MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
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CLONE: HD10-1-25
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Best Local Similarity:
Query Match:
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Pred. No.:
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US-09-899-046-31
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31 LeuLeuGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeuSerValGlyCysValVal
                                                                                                                                                                                                                                                                                                                                                                                                                           11 ThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluValThrThrSerThrTrpVal
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Mismatches:
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Matches:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 31, Application US/09878281; Publication No. US20030032005A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                 4.57e-47
52.00
97.75%
97.75%
39.10%
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401 base pairs
                TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                     MOLECULE TYPE: CDNA
                                                                                  HYPOTHETICAL: NO
ANTI-SENSE: NO
IMMEDIATE SOURCE:
CLONE: HD10-1-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: CDNA HYPOTHETICAL: NO
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Best Local Similarity:
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                                                                                                                                                                            NAME/KEY:
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US-09-899-046-33
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70 uTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIleGluGlnAl 90
                                                                                                                                      78 GluGluCysSerGlnAlaAlaProTyrIleGluGlnAlaGlnValIleAlaHisGlnPhe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: CHIEN, David Y.
APPLICANT: ARCANGEL, Phillip
APPLICANT: TANDESKE, Laura
APPLICANT: TANDESKE, Laura
APPLICANT: GEORGE-TASCIEMENTO, Carlos
APPLICANT: MEDINA-SELBY, Angelica
TITLE OF INVENTION: HCV ANTIGEN/ANTIGODY
FILE REFERENCE: 2302-16073 / PP16073.003
CURRENT APPLICATION NUMBER: US/09/881,239
CURRENT FILING DATE: 2001-06-14
NUMBER OF SEQ ID NOS: 8
SOFTWARE: Patentin Ver. 2.0
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               Length:
Matches:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
ORGANISM: Artificial Sequence
            4.57e-47
52.00
97.75%
97.75%
39.10%
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30.83%
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; LOCATION: (1)..(2487)
US-09-881-239-4
                                   Percent Similarity:
Best Local Similarity:
Query Match:
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Best Local Similarity:
    Alignment Scores:
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LENGTH: 2499
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                                                                                                                                                                                                                                                                                      212 GTATCAACAGTACGATGAGATGGAGGAGTGCTCGCAAGCCGCCCCATACATCGAACAAGC 271
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/878,281
FILING DATE:
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Matches:
Conservative:
Mismatches:
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INFORMATION FOR SEC ID NO: 33:
SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNES: single
                                                                                                           4.57e-47
52.00
97.75%
97.75%
39.10%
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MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
DB:
IMMEDIATE SOURCE:
CLONE: HD10-1-25
                                         CDS
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                                       NAME/KEY:
LOCATION:
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Pred. No.:
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US-09-878-281-33
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Search completed: August 29, 2003, 14:28:10
Job time : 217 secs
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US-09-899-046-29
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FEATURE:
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1390 GAAGAGTGCTCACAAGCTGCCCCATATATCGAACAAGCTCAGGTAATAGCTCACCAGTTC 1449
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TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER REDABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE: OTHER INFORMATION: Description of Artificial Sequence: MEFA 7.1
                                                                                                                                                                                   GENERAL INCORMATION
GENERAL INCORMATION
FALCANT: CHIEN, David Y.
APPLICANT: TANDESE, Philitp
APPLICANT: TANDESE, Lura
APPLICANT: GEORGE-NASCIEMENTO, Carlos
APPLICANT: GEORGE-NASCIEMENTO, Carlos
APPLICANT: COLT, DOTIS
APPLICANT: COLT, DOTIS
TITLE OF INVENTION: LAMUNOASSAYS FOR ANTI-HCV ANTIBODIES
FILE REFERENCE: 2302-17039 / PP17039.002
CURRENT APPLICATION NUMBER: 60/212,082
PRIOR FILING DATE: 2001-06-14
PRIOR FILING DATE: 2001-06-14
PRIOR FILING DATE: 2001-06-15
PRIOR FILING DATE: 2001-04-02
PRIOR FILING DATE: 2001-04-02
PRIOR FILING DATE: 2001-04-02
NUMBER OF SEQ ID NOS: 7
SOCTWARR: PATENTING DATE: 2001-04-02
NUMBER OF SEQ ID NOS: 7
SOCTWARR: PATENTING DATE: 2001-04-02
SOCTWARR: PATENTING DATE: 2001-04-02
NUMBER OF SEQ ID NOS: 7
SOCTWARR: PATENTING DATE: 2001-04-02
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Matches:
Conservative:
Mismatches:
Indels:
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Publication No. US20030008274A1
GENERAL INFORMATION:
                                                                                                                                                       Sequence 3, Application US/09881654 Patent No. US20020146685A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: DNA
ORGANISM: Artificial Sequence
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; LOCATION: (1)..(3297)
US-09-881-654-3
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Best Local Similarity:
Query Match:
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2362 AAG 2364
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LENGTH: 3297
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US-09-899-046-29
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US-09-881-654-3
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Patentin Release #1.0, Version #1.25 (EPO)
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119
0
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Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-638-693-36 (1-133) x US-09-899-046-29 (1-287)
                                                                                                                                                                                                                                                                                                                                                                                        Matches:
                                                                                                                                                                                                                                                                                                                                                                         Length:
                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels:
                          CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/899,046
FILING DATE:
                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
FILING DATE:
INFORMATION FOR SEQ ID NO: 29:
SEQUENCE CHARACTERISTICS:
LENGTH: 287 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: linear
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                         1.38e-11
                                                                                                                                                                                                                                                                                                                                                                                                  100.00%
100.00%
14.29%
                                                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: CDNA HYPOTHETICAL: NO ANTI-SENSE: NO IMMEDIATE SOURCE: CLONE: HCC1153
                                                                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
Query Match:
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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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 protein search, using sw model OM protein August 29, 2003, 11:18:29 ; Search time 17 Seconds (without alignments) 752.379 Million cell updates/sec Run on:

9E-669-8E9-60-SD

133 1 QNEICLTHPITKYIMACMSA......VIEPIVTTNWQKLEAFWHKH 133 Title: Perfect score: Sequence:

Scoring table:

OLIGO Gapop 60.0 , Gapext 60.0

283308 seqs, 96168682 residues Searched:

0

Word size :

Total number of hits satisfying chosen parameters: Minimum DB seq length: 0 Maximum DB seq length: 2000000000

283308

summaries Post-processing: Listing first 45

pir1:* pir2:* pir3:* PIR_76:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution. pir4:*

	Description	genome polyprotein			genome polyprotein					1	genome polyprotein					4-hydroxybenzoate	probable membrane	proline racemase (spore germination	probable PPE prote	multidrug resistan	GTP cyclohydrolase	hypothetical prote	hypothetical prote		0	hypothetical prote		hypothetical prote	н
SUMMARIES	ID	PC1306	PC1307	PC2219	GNWVTC	GNWVCJ	GNWVTW	JC5620	PS0326	JQ1366	GNWVC3	GNWVCH	S40770	A45573	S18030	B84219	S61982	AD3450	E69889	E70598	C84201	S54909	H83065	G83545	S35629	B70647	D95864	B84260	C72737	A61196
	h DB	2	•	2		0	0	T	7	2	1	1 1	- -	0	0			2												
	Length	209	142	876	3010	301(3010	3014	492	716	3011	3011	3011	3010	301(28(327	34.	363	399	42(æ	96	107	12	128	159	172	174	18
dФ	Query	73.7	39.1		4	14.3	14.3			٠		٠	•	9.0		•	6.0	9.0	•			٠	•		•	•	5.3			5.3
	Score	86	25	19	19	19	19	19	13	13	13	13	13	12	12	σ	80	80	œ	œ	80	7	7	7	7	7	7	7	7	7
	Result No.	1	7	m	4	2	9	7	80	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29

genome polyprotein NS4a epitope containing region (isolate HD10-1) - hepatitis C vir C; Species: hepatitis C virus C; Species: hepatitis C virus C; Species: 03-M97-1994 #sequence_revision 03-May-1994 #text_change 17-Nov-2000 C; Accession: PC1307 R; Stuyver, L.; Van Arnhem, W.; Wyseur, A.; DeLeys, R.; Maertens, G. Biochem. Biophys. Res. Commun. 192, 635-641, 1993 A; Title: Analysis of the putative El envelope and NS4a epitope regions of HCV type 3 A; Reference number: PC1300; MuID:93249436; PMID:7683463

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Gaps

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39.1%; Score 52; DB 2; Length 142; 100.0%; Pred. No. 3.6e-44; Live 0; Mismatches 0; Indels

Query Match 39.1 Best Local Similarity 100. Matches 52; Conservative

A; Experimental source: blood C; Superfamily: hepatitis C virus genome polyprotein C; Keywords: polyprotein

A; Cross-references: DDBJ:D14602

A; Molecule type: mRNA A; Residues: 1-142 <STU>

transcription requ	probable nonstruct	nonstructural prot	gene 10 protein -	probable transcrip	conserved hypothet	probable lipoprote	aquaporin [importe	aquaporin Z, water	hypothetical prote	ABC transporter, A	hypothetical prote	hypothetical prote	probable methionyl	methionyl aminopep	methyltransferase
AE3363	A54317	206067	WMBPTB	G95276	B81067	G81801	B95207	B98072	C83663	D96932	E65082	AG2300	C71107	JC5671	AD3473
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188	194	194	203	204	217	217	222	222	228	234	235	245	295	295	303
5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5. 3.	5.3	5.3	5,3	5.3	5.3
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30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

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Genome polyprotein NS4a epitope containing region (isolate BR36-20) - hepatitis C virus C; Species: hepatitis C virus C; Species: hepatitis C virus C; Species: Nay-1994 #text_change 17-Nov-2000 C; Accession: PC1306 C; Accession: PC1306 C; Accession: PC1306 C; Accession: PC1306 C; Aritle: Analysis of the putative E leavelope and NS4a epitope regions of HCV type 3 A; Reference number: PC1300; MUID:93249436; PMID:7683463 A; Accession: PC1300; MUID:93249436; PIDN:BAA03449.1; PID:9303585 A; Residues: 1-209 cSTU> A; Cossion: PC1306 C; Accession: PC1306 C; Cossion: PC1306 CSTU> A; CSSTUPE CSTUPE C
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
RESULT 1
PC1306
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PC1307
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F;2014-3010/Product: nonstructural protein NS5 *status predicted <NS5>
F;196,209,234,250,305,325,417,423,430,448,532,540,556,576,623,645,1213,1255,2041,2077
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                                                                                                                                                                                                                                                                           6 LTHPITKYIMACMSADLEV 24
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100.0%;
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Best Local Similarity luv..
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Best Local Similarity 100.
Matches 19; Conservative
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S; Takamizawa, A; Mori, C.; Fuke, I.; Manabe, S.; Murakami, S.; Fujita, J.; Onishi, E.;
J. Virol. 65, 1105-1113, 1991
A; Titakamizawa, A; Mori, C.; Fuke, I.; Manabe, S.; Murakami, S.; Fujita, J.; Onishi, E.;
J. Virol. 65, 1105-1113, 1991
A; Titakamizawa, A; Mori, C.; Fuke, I.; Manabe, S.; Murakami, S.; Fujita, J.; Onishi, E.;
A; Arcession: A38465
A; Moriol. 67ARA
A; Residues: 1-3010 craps.
A; Cross-references: EMBL:M58335; NID:9329770; PIDN:AA72945.1; PID:9329771
C; Superfamily: hepatitis C virus genome polyprotein
C; Superfamily: hepatitis C virus genome polyprotein; glycoprotein; hydrolase; nonstructural
C; Superfamily: hepatitis C virus genome polyprotein
C; Superfamily: hepatitis C virus genome polyced cCRP>
F; 115/Product: major envelope protein M #status predicted <NES>
F; 120-115/Product: monstructural protein NS4 #status predicted <NES>
F; 130-1237/Region: nucleotide-binding motif B
F; 1310-1319/Region: DEXH motif
F; 1861-1862/Product: nonstructural protein NS4a #status predicted <NAB>
F; 1863-2013/Product: nonstructural protein NS4b #status predicted <NAB>
F; 1863-2013/Product: nonstructural protein NS4b #status predicted <NAB>
                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: nepatitis C virus
C;Species: nepatitis C virus
C;Species: nepatitis C virus
C;Species: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 17-Nov-2000
C;Accession: PC2219
R;Stuyver: L.; Arnhem, W.V.; Wyseur, A.; Maertens, G.
Biochem. Biophys. Res. Commun. 202, 1308-1314, 1994
A;Title: Cloning and phylogenetic analysis of the core, E2, and NS3/NS4 regions of the A;Reference number: PC2219; MUID:94338342; PMID:7520237
A;Recension: PC2219
A;Molecule type: mRNA
A;Residues: 1-876 <STU>
A;Cross-references: GB:L29577; GB:L29578; GB:L29579
A;Residues: 1-876 <STU>
A;Cross-references: GB:L20577; GB:L29578; GB:L29579
A;Residues: 1-876 <STU>
A;Residues: 1-8781 (amino end) #status predicted <ENR>
F; 248-11/Product: Core #status predicted <NSA>
F; 339-411/Region: NS1 (amino end)
F; 12-183/Product: NS48 #status predicted <NSA>
F; 838-876/Product: NS48 #status predicted <NSA>
F; 838-876/Product: NS48 #status predicted <NSA>
F; 831,287,294,312,340/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                           polypeptide – hepatitis C virus (type 5a) (fragments)
N;Contains: core protein; El (carboxyl end); E2/NS1 (amino end); NS3 protein; NS4A prote
C;Species: hepatitis C virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genome polyprotein – hepatitis C virus
N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstructu
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           E2, and NS3/NS4 regions of the
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Pred. No. 1.2e-10;
0; Mismatches 0; Indels
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Local Similarity 100.0%; P.
es 19; Conservative 0;
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genome polyprotein - hepatitis C virus (strain J)
N;Contains: capsid protein C; envelope protein M; major envelope protein E; nonstruct
Drotein NS4a; nonstructural protein NS4b; nonstructural protein NS5
C; Species: hepatitis C virus
C; Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 19-Jan-2001
C; Accession: A39253; ps6086
R; Kato, N; Hijikata, M; Ootsuyama, Y; Nakagawa, M; Ohkoshi, S.; Sugimura, T.; Shi
Proc. Natl. Acad. Sci. U.S.A. 87, 9524-9528, 1990
A; Title: Molecular cloning of the human hepatitis C virus genome from Japanese patien
A; Accession: A39253; MUID:91088550; PMID:2175903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: genomic RNA
A; Residues: 1-3010 (KAT>
A; Cross-references: GB:D90208; NID:g221610; PIDN:BAA14233.1; PID:g221611
A; Kato, N.; Ohkoshi, S.; Shimotohno, K.
Proc. Jpn. Acad. 65B, 219-223, 1989
A; Title: Japanese isolates of the non-A, non-B hepatitis viral genome show sequence v
A; Reference number: PS0085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Wolecule type: genomic RNA
A; Residues: 2650-2707 (KA2>
C; Comment: The cleavage sites of this polyprotein have not been determined.
C; Comment: The cleavage sites of this polyprotein
C; Superfamily: hepatitis C virus genome polyprotein
C; Superfamily: hepatitis C virus genome polyprotein
C; Steywords: ATP; glycoprotein; hydrolase; nucleotide AcRO-
F; 116-115/Product: capsid protein M #status predicted cRE>
F; 190-729/Product: major envelope protein E #status predicted cME>
F; 390-729/Product: nonstructural protein NSI #status predicted cNSI>
F; 300-129/Product: nonstructural protein NSI #status predicted cNSI>
F; 1307-1615/Product: hepativirin #status predicted cNSI>
F; 1312-1317/Region: nucleotide-binding motif A (P-loop)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     genome polyprotein - hepatitis C virus (strain Taiwan)
N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstru
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
C;Species: hepatitis C virus
A;Note: host Homo Sapiens (man)
C;Date: 31-Dec-1992 #sequence_revision 31-Dec-1992 #text_change 19-Jan-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F;1616-1862/Product: nonstructural protein NS4a #status predicted <N4A>
F;1863-2013/Product: nonstructural protein NS4b #status predicted <N4B>
F;2014-3010/Product: nonstructural protein NS5 #status predicted <NS5>
F;196,209,234,250,305,325,417,423,430,448,532,556,576,623,645,1213,1255,2041,2077,224
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                              Length 3010;
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R; Chen, P.J.; Lin, M.H.; Tai, K.F.; Liu, P.C.; Lin, C.J.; Chen,
Virology 188, 102-113, 1992
                                                                                                                 Indels
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                          Score 19; DB 1; Lo
Pred. No. 3.3e-10;
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Pred. No. 3.3e-10;
14.3%; Scc...
100.0%; Pred. No. ...
0; Mismatches
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Query Match
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Matches 1
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A Residues: 1-3014 CHA>
A Residues: 1-3014 CHA>
A Cross references: GB:13184
A Cross references: GB:13184
A Cross references: GB:13184
A Residues: 1-3014 CHA>
A Cross references: GB:13184
A Residues: 1-3014 CHA>
A Residues
                                                                                                                                                                                 A; Wolecule type: genomic RNA
A; Residues: 1-3010 <CHED
A; Cross-references: GB:M84754
G; Superfamily: hepatitis C virus genome polyprotein
C; Superfamily: hepatitis C virus genome polyprotein; glycoprotein; hydrolase; nonstructura
C; Keywords: ATP; capsid protein; envelope protein; glycoprotein; hydrolase; nonstructura
F; 115, Product: capsid protein C #status predicted <ED>
F; 115, Product: major envelope protein E #status predicted <MEE>
F; 130-739, Product: nonstructural protein NS1 #status predicted <NS1>
F; 730-1006, Product: hepacivirin #status predicted <NS2>
F; 1007-1615, Product: hepacivirin #status predicted <NS3>
F; 1230-1237, Region: nucleotide-binding motif B
F; 1312-1317, Region: nucleotide-binding motif B
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F;1863-2013/Product: nonstructural protein NS4b #status predicted <N4B>
F;2014-3010/Product: nonstructural protein NS5 #status predicted <NS5>
F;2014-3010,209,233,234,250,305,325,417,423,430,448,532,540,556,576,623,645,1213,1255,2041,207
A;Title: The Taiwanese hepatitis C virus genome: sequence determination and mapping A;Reference number: A40244; MUID:92230206; PMID;1314449
A;Accession: A40244
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Pred. No. 3.3e-10;
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100.0%;
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Matches 19; Conserv
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Best Local Similarity
Matches 19; Conserv
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1638 LTHPITKYIMACMSADLEV 1656

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6 LTHPITKYIMACMSADLEV 24

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RESULT 8
PS0326
polyprotein - hepatitis C virus (isolate Fla) (fragments)
C;Species: hepatitis C virus
C;Species: hepatitis C virus
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 17-Nov-2000
C;Accession: PS0326
R;Li, JS:; Tong, S.P.; Vitvitski, L.; Lepot, D.; Trepo, C.
Gene 105, 167-172, 1991
A;Title: Two French genotypes of hepatitis C virus: homology of the predominant geno A;Reference number: PS0326; MUID:92039028; PMID:1718820
A;Accession: PS0326
A;Molecule type: genomic RNA
A;Residues: 1-492 <LIJ>
A;Crossriences: GB:M60220
A;Note: this sequence corresponds to nonstructural protein NS3 region
A;Note: translation of the nucleotide sequence is not complete
C;Superfamily: hepatitis C virus genome Polyprotein
C;Keywords: polyprotein
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J01366
J01366
J01366
J01366
J01366
C; Species: hepatitis C virus (French isolate) (fragments)
C; Species: hepatitis C virus
C; Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 17-Nov-2000
C; Accession: J01366
C; Accession: J01366
A; Title: Partial nucleotide sequence analysis of a French hepatitis C virus: implica A; Reference number: J01366; MUID:92013977; PMID:1655961
A; Reference number: J01366
A; Molecule type: genomic RNA
A; Recession: J01366
A; Molecule type: genomic RNA
A; Residues: 1-716 < KRE>
C; Superfamily: hepatitis C virus genome polyprotein
F; 84,90,97,115,143,199,223,243,290,312/Binding site: carbohydrate (Asn) (covalent) #
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N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstr
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
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A;Residues: 1-3011 - CCHO>
A;Cross references: GB:M62321; NID:g329873; PIDN:AAA45676.1; PID:g329874
R;Crhan, S.W.; McOmish, F.; Holmes, E.C.; Dow, B.; Peutherer, J.F.; Follett, E.; Yap,
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C; Species: hepatitis C virus
C; Otate: 30-Sep-1992 #sequence_revision 30-Sep-1992 #text_change 19-Jan-2001
C; Accession: A39166; PQ0403; PQ0404
C; Accession: A39166; PQ0403; PQ0404
R; Choo, Q.L.; Rtchman, K.H.; Han, J.H.; Berger, K.; Lee, C.; Dong, C.; Gallegos, Proc. Natl. Acad. Sci. U.S.A. 88, 2451-2455, 1991
A; Title: Genetic organization and diversity of the hepatitis C virus.
A; Reference number: A39166; MUID:91172826; PMID:1848704
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3. 9.4e-05;
0;
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Pred. No. 6.8e-05;
0; Mismatches 0;
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Best Local Similarity 100.
Matches 13; Conservative
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1664 GGVLAALAAYCLS 1676
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                                                                                                                  Query Match
Best Local Similarity 100...
Local 13; Conservative
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Best Local Similarity 100.
Matches 13; Conservative
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A; Residues: 1-513 <OK2>
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                                                                                                                                 A; Molecule type; genomic RNA
A; Residues: 1577-1633 < CHA>
A; Cross-references: DDBJ:D10128
A; Experimental source: isolates E-b16
A; Accession: p00404
A; Status: preliminary
A; Molecule type; genomic RNA
A; Residues: 1577-1633 < CH2>
A; Experimental source: isolates E-b17
C; Superfamily: hepatitis C virus genome polyprotein
C; Keywords: ATP; capsid protein; envelope protein; glycoprotein; hydrolase; nonstructure
F; 1-115/Product: capsid protein M #status predicted < CPC>
F; 116-191/Product: envelope protein M #status predicted < CME>
F; 130-13006/Product: monstructural protein NS #status predicted < NSI>
F; 1007-1615/Product: nonstructural protein NS2 #status predicted < NSI>
F; 130-1237/Region: nucleotide-binding motif A (P-loop)
F; 1312-1317/Region: DEXH motif
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C; Species: hepatitis C virus
A; Note: host Homo sapiens (man)
C; Date: 31-Dec:1992 #sequence_revision 31-Dec-1992 #text_change 19-Jan-2001
C; Date: 31-Dec:1992 #sequence_revision 31-Dec-1992 #text_change 19-Jan-2001
C; Accession: A38614; A41546
S; Inchauspe, G; Zebedee, S; Lee, D.H.; Sugitani, M.; Nasoff, M.; Prince, A.M.
A; Reference number: A38614
A; Reference side: A38614
A; Reference side: A38614
A; References: GB: R67463; NID: 9329737; PIDN: AAA45534.1; PID: 9329738
A; Residues: 1-301 - (xinc.)
A; Residues: 1-301 - (xinc.)
A; Residues: Care GB: R67463; NID: 9329737; PIDN: AAA45534.1; PID: 9329738
A; Rinchauspe, G; Zebedee, S; Lee, D.H.; Sugitani, M.; Nasoff, M.; Prince, A.M.
A; Rinchauspe, G; Zebedee, S; Lee, D.H.; Sugitani, M.; Nasoff, M.; Prince, A.M.
A; Richerence number: A41546; MUID: 92052256; PMID: 1658800
A; Contents: annotation or nucleotide sequence is given
C; Stoperfamily: hepatitis C virus genome polyprotein; glycoprotein; hydrolase; nonstructural
C; Keywords: ATP; capsid protein C * status predicted <CPC>
C; Stoperfamily: hepatitis C virus genome polyprotein G; Stoperfamily: mostine major envelope protein B * status predicted <NEE>
F; 116-191/Product: major envelope protein MS1 * status predicted <NEE>
F; 116-191/Product: major envelope protein NS2 * status predicted <NEE>
F; 130-129/Product: nonstructural protein NS2 * status predicted <NEE>
F; 130-1006/Product: nonstructural protein MS2 * status predicted <NEE>
F; 130-130/Fredion: nucleotide-binding motif B
F; 1312-1313/Region: nucleotide-binding motif B
F; 1312-1313/Region: predicted suppredicted <NEE>
F; 1316-131/Region: predicted binding motif B
F; 1316-130-1006/Product: nonstructural protein MS2 * * Status Predicted <NEE>
F; 1316-131/Region: predicted binding motif B
F; 1316-130-1006/Product: nonstructural protein MS2 * * Status Predicted <NEE>
F; 1316-131/Region: predicted binding motif B
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F;1863-2013/Product: nonstructural protein NS4b #status predicted <N4B>
F;2014-3011/Product: nonstructural protein NS5 #status predicted <NS5>
F;196,209,234,305,325,417,423,430,448,476,532,540,556,576,623,645,1213,1255,2041,2077,22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            genome polyprotein - hepatitis C virus (strain H)
N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstructu
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
           A;Reference number: PQ0393; MUID:92268871; PMID:1316939
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100.0%; Pred. No. 0.00031;
tive 0; Mismatches 0; Indels
Virol. 73, 1131-1141, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           33 GGVLAALAAYCLS 45
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Best Local Similarity 100.
Matches 13; Conservative
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F;1863-2013/Product: nonstructural protein NS4b #status predicted <N4B>
F;2014-3011/Product: nonstructural protein NS5 #status predicted <NS5>
F;196,209,234,305,325,417,423,430,448,476,532,540,556,576,623,645,1213,1255,2041,2240
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A; Cross-references: EMBL:D10749; NID:g221586; PIDN:BAA01582.1; PID:g221587
B; Okamoto, H.; Okada, S.; Sugiyama, Y.; Yotsumoto, S.; Tanaka, T.; Yoshizawa, H.; Tsu
Jpn. J. Exp. Med. 60, 167-177, 1990
A;Title: The S'.terminal sequence of the hepatitis C virus genome.
A; Reference number: PC1284; MUID:91013116; PMID:2170712
A; Accession: PC1285
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A.Experimental source: isolate HC-J1
C.Superfamily: hepatitis C virus genome polyprotein
F;2-115/Product: capsid protein C *status predicted <PC>
F;10-115/Product: major envelope protein # *status predicted <NSI>
F;390-729/Product: monstructural protein NSI *status predicted <NSI>
F;100-1006/Product: nonstructural protein NSI *status predicted <NSI>
F;100-11615/Product: nonstructural protein NSI *status predicted <NSI>
F;130-1237/Region: nucleotide-binding motif A (P-loop)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein M; hepacivirin (EC 3.4.21.98) (nonstru
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Virus Res. 23, 39-53, 1992
A;Title: Molecular cloning of hepatitis C virus genome from a single Japanese carrier
A;Reference number: A45573; MUID:92295714; PMID:1318627
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N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98;
protein NG4a; nonstructural protein NS4b; nonstructural protein NS5
C;Species: hepatitis C virus
C;Species: hepatitis C virus
C;Date: 19-May-2000 #sequence_revision 19-May-2000 #text_change 19-Jan-2001
C;Accession: A45573
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                                                                                                                                                                                          9.8%; Score 13; DB 1; Length 3011; 100.0%; Pred. No. 0.00031; vative 0; Mismatches 0; Indels
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100.0%; Pred. No. 0.00031;
tive 0; Mismatches 0;
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R;Okamoto, H.
submitted to the EMBL Data Library, March 1992
A;Reference number: $40770
A;Accession: $40770
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Gaps

Length 3010;

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161 GGVLAALAA 169
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Matches
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Job time
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A.Note: this sequence is inconsistent with the nucleotide translation
A.Note: the authors translated the codon AGG for residue 43 as Pro, TGG for residue 320
as Trp, and TrC for residue 771 as Ser
A.Note: sequence extracted from NCBI backbone (NCBIN:121747, NCBIP:121748)
C.Superfamily: hepatitis C virus genome polyprotein
C.Superfamily: hepatitis C virus genome polyprotein
F.12-115/Product: capsid protein C *status predicted CRC>
F.116-191/Product: major envelope protein M *status predicted CME>
F.192-389/Product: major envelope protein NSI *status predicted <NSI>
F.190-729/Product: nonstructural protein NSI *status predicted <NSI>
F.1007-1615/Product: hepacivirin *status predicted <NSI>
F.1127-1317/Region: nucleotide-binding motif B (P-100P)
F.1317-1317/Region: nucleotide-binding motif B (P-100P)
F.1316-1917/Region: predicted F.100P)
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C;Caccession: S18030; S33570; Ad8332; S18029
R;Honda, M.; Kaneko, S.; Masashi, U.; Kobayashi, K.; Murakami, S.
submitted to the EMBL Data Library, September 1991
A;Bestribun: A whole genome of hepatitis C virus cDNA was isolated from a single patie
A;Reference number: S18028
A;Accession: S18030
                                                                                                                                      A. Experimental source: HCV-TY
A. Note: sequence extracted from NCBI backbone (NCBIN:106206, NCBIP:106207)
C. Superfamily: hepatitis C virus genome polyprotein
C. Sequence extracted from NCBI backbone (NCBIN:106206, NCBIP:106207)
C. Superfamily: hepatitis C virus genome polyprotein
C. Sequence extracted from NCBI brought CPC-
F. 2-115/Product: capsid protein C #status predicted CPC-
F. 1910-789/Product: envelope protein E #status predicted CMED-
F. 380-729/Product: nonstructural protein NSI #status predicted CMSI-
F. 300-729/Product: nonstructural protein NSI #status predicted CMSI-
F. 1007-1615/Product: nepacivirin #status predicted CMSI-
F. 101-1237/Region: nucleotide-binding motif A (P-loop)
F. 1312-1317/Region: nucleotide-binding motif B
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N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstructu protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
C;Species: hepatitis C virus
A;Variety: isolate JK1
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A; Residues: 1-3010 cHON>
A; Cross-references: EMBL: A51596; NID: 959478; PIDN: CAA43793.1; PID: 959479
A; Experimental source: 1solute JK1 from an individual
R; Honda, M.; Kaneko, S.; Unoura, M.; Kobayashi, K.; Murakami, S.
Arch. virol. 128, 163-169, 1933
A; Title: Sequence analysis of putative structural regions of hepatitis C virus isolated
A; Reference number: A48332; MUID: 93119270; PMID: 8380322
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A;Residues: 1-547,'T',549-621,'V',623-624,'S',626-652,'DL',655-761,'T',763-782 <HOW>
A;Cross-references: EMBL:X61591
                                                                   A; Residues: 1:3010 <TAN>
A; Cross-references: GB:D11168; GB:D01171; NID:g221612; PIDN:BAA01943.1; PID:g221613
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100.0%; Pred. No. 0.0031;
tive 0; Mismatches 0; Indels
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Best Local Similarity
preliminary
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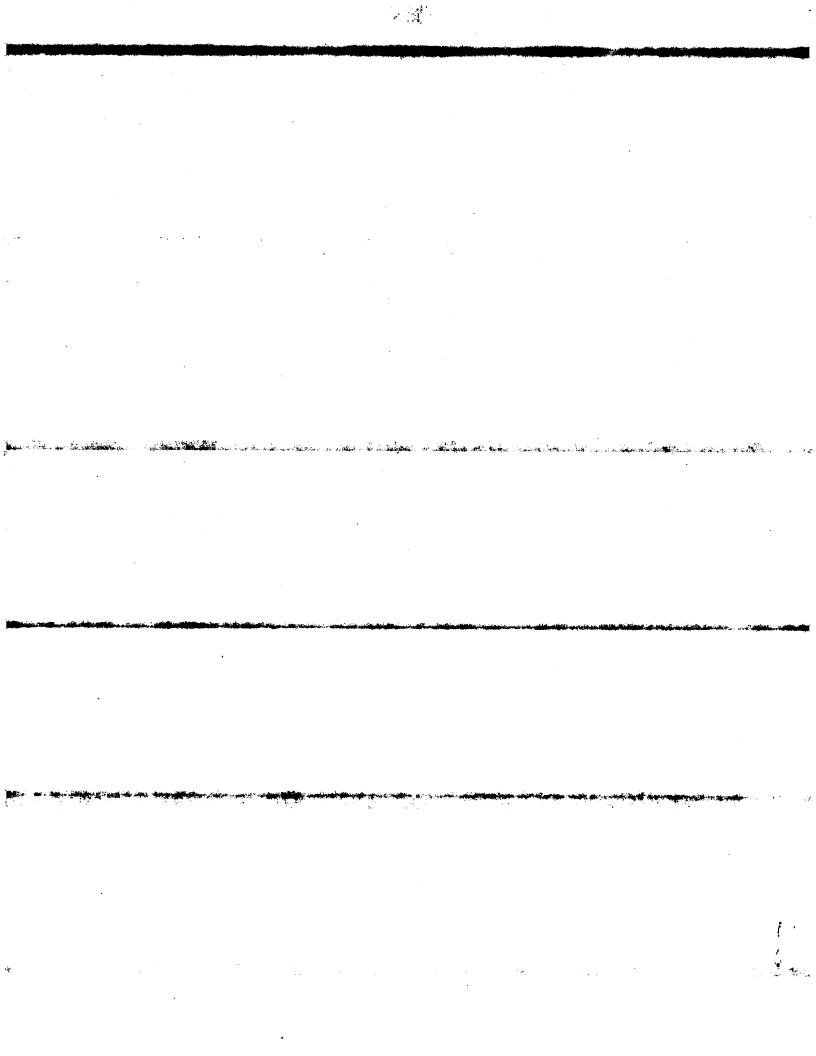
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4.hydroxybenzoate octaprenyltransferase [imported] - Halobacterium sp. NRC-1
C;Species: Halobacterium sp. NRC-1
C;Date: 02-Peb-2001 #sequence_revision 02-Feb-2001 #text_change 01-Mar-2002
C;Accession: B84219
R;Ng, W.V.; Kennedy, S.P.; Mahairas, G.G.; Berquist, B.; Pan, M.; Shukla, H.D.; Lasky J. Laithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, D.G.; Jr. Jung, K.H.; Alam, M.; Frettas, T.
Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
A;Title: Genome sequence of Halobacterium species NRC-1.
A;Ritle: Genome sequence of Halobacterium species NRC-1.
F;1863-2013/Product: nonstructural protein NS4b #status predicted <NAB>
F;2014-3010/Product: nonstructural protein NS5 #status predicted <NS5>
F;196,209,234,250,305,417,423,448,532,540,556,576,623,645/Binding site: carbohydrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Cross-references: GB: AE004437; NID: 910580202; PIDN: AAG19118.1; GSPDB: GN00138
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                                                                                                         Score 12; DB 1; Length JULY, Pred, No. 0.0031;
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                                                                                                                       9.0%; Scor.
100.0%; Pred. No. vo.
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ne : 20 secs
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Best Local Similarity 100.
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Database :

ription	P26662 h genome po P26662 h genome po P2664 h genome po P2664 h genome po P2664 h genome po P2664 h genome po P2669 h genome po P2669 h genome po P5159 mycobacteri p2873 bacteriopha Q9kqf bacillus ha Q46831 escherichia p28732 bacteriopha Q9kqw ralstonia s P5499 streptomyce P56218 pyrococcus. O05596 mycobacteri Q9ae7 xylella fas P56218 pyrococcus. O05596 mycobacteri p13986 acinetobact Q1106 mycobacteri p13986 acinetobact Q1106 mycobacteri p1257 escherichia P22487 mycobacteri p13634 homo sapien P23791 oryctolagus Q28036 bos taurus p2475 sus scrofa Q61165 mus musculu P26431 rattus norv
SUMMARIES	POLCG HCVBK POLCG HCVJW POLCG HCVJW POLCG HCVJT POLCG HCVJT POLCG HCVJT POLCG HCVJT CGCH EUGGR NUOA_MYCTU USPD_BACHD YQGA ECOLI USPD_BACHD YQGA ECOLI SPPD_BACHD YQGA ECOLI ANDA SYRPR ANTATU ANDA SYRPR WYCTU MURE_RHILO MURE_RHILO MURE_RHILO WAHL_RABIT NAHL_BUMAN NAHL_RABIT NAHL_BOVIN
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ALIGNMENTS

RESULT 1 POLG_HCVBK ID POLG_C AC D1-AU DT 01-AU DT 01-AU DT 01-AU DT 01-AU DE GROOM

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01-AUG-1992 (Rel. 23, Created)
01-AUG-1992 (Rel. 23, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Genome polyprotein (Contains: Capsid protein C (Core protein) (P22);
Envelope glycoprotein El (GP32) (GP35); Envelope glycoprotein E2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         14.3%; Score 19; DB 1; Length 3010; 100.0%; Pred. No. 1.4e-10; Ive. 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CELLULAR AMINOPEPTIDASE.
CAPSID PROTEIN C (POTENTIAL).
MATRIX PROTEIN (POTENTIAL).
MAJOR ENVELOPE PROTEIN E (POTENTIAL).
NONSTRUCTURAL PROTEIN NS1/E2 (POTENTIAL).
PROTENSE/HELICASE NS3 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
RNA DIRECTED RNA POLYMERASE (POTENTIAL).
             SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase; Core protein; Coat protein; Envelope protein; Helicase; ATP-binding; Transmembrane; Nonstructural protein; Hydrolase; Serine protease;
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                                                                        -!- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY S29.
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InterPro; IRR001411; DEAD.
InterPro; IRR002521; HCV_capsid.
InterPro; IRR002521; HCV_core.
InterPro; IRR002531; HCV_NS1.
InterPro; IRR002531; HCV_NS2.
InterPro; IRR001499; HCV_NS3.
InterPro; IRR001499; HCV_NS4.
InterPro; IRR001499; HCV_NS4.
InterPro; IRR001499; HCV_NS4.
InterPro; IRR002166; HCV_NS4.
InterPro; IRR007095; RNA_pol_DS_PS.
InterPro; IRR007095; RNA_pol_DS_PS.
InterPro; IRR007094; RNA_pol_DS_PS_IRR007094; RCV_NS2; I.
Pfam; PF01538; HCV_NS2; I.
Pfam; PF01001; HCV_NS4b; I.
Pfam; PF01001; HCV_NS4b; I.
Probom; PD186062; HCV_NS5a; I.
Probom; PD186062; HCV_NS1; I.
                                                                                                                                                                                                                    EMBL; M58335; AAA72945.1; -. PIR; A38465; GNWVTC.
                                                                                                                                                                                                                                             PDB; 1A10; 25-WAR-98; PDB; 1JXP; 14-JAN-98; PDB; 1LXP; 16-DR-98; PDB; 1C2P; 15-NOV-09; PDB; 1GX5; 09-APR-02; PDB; 1GX5; 00-APR-02; PDB; 1GX5; 10-APR-02; PDB; 1GX5; 10-APR-03; BDB; 1GX5; 10-APR-03; BDB; 1GX5; 10-APR-04; 10-APR-05; 1
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          (EC 3.4.22.-); Protease/helicase NS3 (P70) (Hepacivirin) (EC 3.4.21.98); Nonstructural protein NS4A (P4); Nonstructural protein NS5A (P56); Nonstructural protein NS5B (P57); Nonstructural protein NS5B (P66) (P70) (RNA-directed RNA polymerase) (EC 2.7.7.48)]. Hepatitis C virus (isolate Japanese) (HCV).
                                                                                                                                                                                                                                   MEDLINE=9119160; PubMed=1849488;
Kato N., Hijikata M., Nakagawa M., Ootsuyama Y., Muraiso K.,
Kato N., Hijikata M., Nakagawa M., Ootsuyama Y., Muraiso K.,
Kato N., Hijikata M., Nakagawa M., Ootsuyama Y., Muraiso K.,
Molecular structure of the Japanese hepatitis C viral genome.";
FEBS Lett. 280:325-328(1991).
-! FUNCTION: THE SMALL PROFIEINS NS2A, NS2B, NS4A AND NS4B ARE
-! FUNCTION: THE SMALL PROFIEINS MEMBRANE-RELAATED FUNCTION.
NS3 AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION.
-! CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral precursor polyprotein, commonly with Asp or Glu in the P6
position, Cys or Thr in P1 and Ser or Ala in P1'.
-! CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
                                                                                                                                                                                                                                                                                                                                                                                                        SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A LIPOPROPEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA.
(GP68) (GP70) (NS1); Protein P7; Nonstructural protein NS2 (P21)
                                                                                                                                    MEDLINE=91088550; PubMed=2175903;
Kato N., Hijikata M., Ootsuyama Y., Nakagawa M., Ohkoshi S., Sugimura T., Shimotohno K.;
"Molecular cloning of the luman hepatitis C virus genome from Japanese patients with non-A, non-B hepatitis.";
Proc. Natl. Acad. Sci. U.S.A. 87:9524-9528(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY S29.
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IPR001650; Helicase_C.
IPR007095; RNA_pol_DS_PS.
IPR007094; RNA_pol_PSvir.
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HCV_NS4a.
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Pfam; PF01542; HCV_core; 1
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InterPro; IPR002522;
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InterPro; IPR000745;
InterPro; IPR001490;
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IPR002166;
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                                                                                                 NCBI_TaxID=11116;
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Envelope glycoprotein [Colleging of GP35], Envelope glycoprotein E2 (GP68) (GP70) (NS1); Protein E7 (GP35), Envelope glycoprotein E2 (GP68) (GP70) (NS1); Protein P7; Nonstructural protein NS2 (P21) (EC 3.4.22...); Proteases/helicase NS3 (P70) (Hepacivirin) (EC 3.4.21.98); Nonstructural protein NS4A (P4); Nonstructural protein NS5A (P56); Nonstructural protein NS5A (P66) (P70) (NAN-directed NRA POLymerase) (EC 2.7.7.48)]. Hepatitis C virus (isolate Taiwan) (HCV).
                                                                               POLYPICATION OF TABLE TRANSFERSES, RNA-directed RNA polymerase, Core protein; Glycoprotein; Brvelope protein; Helicase; ATP-binding; Transmembrane; Nonstructural protein; Hydrolase; Serine protease.

Transmembrane; Nonstructural protein; Hydrolase; Serine protease.

INIT_MET 1 REMOVED FROM CAPSID PROTEIN C BY THE CHILL NET 1 CAPSID PROTEIN C (POTENTIAL).

CHAIN 192 383 MAJOR ENVELOPE PROTEIN E (POTENTIAL).

CHAIN 384 729 NONSTRUCTURAL PROTEIN BI (POTENTIAL).

CHAIN 730 1006 NON-STRUCTURAL PROTEIN NSI (POTENTIAL).

CHAIN 1007 1615 PROTEASE/HELICASE NSI (POTENTIAL).
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01-APR-1993 (Rel. 25, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Genome polyprotein (Contains: Capsid protein C (Core protein) (P22);
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Pfam; PF01506; HCV_NS5a; 1.
Pfam; PF00271; helicase_C; 1.
Pfam; PF00998; Viral_RdRP; 1.
ProDom; PD186062; HCV_NS1; 1.
SMART; SM00487; DEXDC; 1.
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NCBI_TaxID=31645;
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Hepacivirus
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                  Chen P.J., Lin M.H., Tai K.F., Liu P.C., Lin C.J., Chen D.S.;
The Taiwanese hepatitis C virus genome: sequence determination and mapping the S' terminal of viral genomic and antigenomic RNA.";
Virology 188:102-113(1992).

- FUNCTION: THE SMALL PROFINS NS2A, NS2B, NS4A AND NS4B ARE HYDROPHOBIC. SUGGESTING A POSSIBLE MEMBRANE-RELEATED FUNCTION.

- CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral precursor polyprotein, commonly with Asp or Glu in the P6 position, Cys or Thr in P1 and Ser or Ala in P1.

- CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
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CORE PROTEIN (POTENTIAL).

MAJRIX PROTEIN (POTENTIAL).

MAJOR ENVELOPE PROTEIN E (POTENTIAL).

NONSTRUCTURAL PROTEIN NSJ./E2 (POTENTIAL).

NONSTRUCTURAL PROTEIN NS2 (POTENTIAL).

PROTEASE/HELICASE NS3 (POTENTIAL).
                                                                                                                                                                             SUBONIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase;
Core protein; Coat protein; Envelope protein; Helicase; ATP-binding;
Transmembrane; Nonstructural protein; Hydrolase; Serine protease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROTEASE/HELICASE NS3 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REMOVED FROM CAPSID PROTEIN C BY THE
                                                                                                                                                                                                                     PROTEIN C AND MRNA.
SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY S29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; Irrougaso; InterPro; Irrougaso; InterPro; Irrougaso; HCV_NS4a.
InterPro; IPR001496; HCV_NS4a.
InterPro; IPR001496; HCV_NS5a.
InterPro; IPR0010868; HCV_NS5a.
InterPro; IPR007095; RNA_POL_DS_PS.
InterPro; IPR007095; RNA_POL_DS_PS.
Pfam; PF01543; HCV_copsid; 1.
Pfam; PF01543; HCV_core; 1.
Pfam; PF015560; HCV_NS1; 1.
Pfam; PF01506; HCV_NS2; 1.
Pfam; PF01006; HCV_NS3; 1.
Pfam; PF01006; HCV_NS4b; 1.
Pfam; PF01006; HCV_NS4b; 1.
Pfam; PF01001; HCV_NS4b; 1.
Pfam; PF01001; HCV_NS4b; 1.
Pfam; PF01001; HCV_NS4b; 1.
Pfam; PF00271; Hellcass_C; 1.
Pfam; PF00271; Hellcass_C; 1.
Pfam; PF00271; Hellcass_C; 1.
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             MEDLINE=92230206; PubMed=1314449;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     HCV_capsid.
HCV_core.
HCV_env.
HCV_NSI.
HCV_NS2.
HCV_NS3.
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InterPro; IPR002522; HCV_C
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                                                                                                                                                                                                                                                                                                                                                                            PIR; A40244; GNWVTW.
PDB; 1N64; 25-FEB-03.
PDB; 1NS3; 08-APR-98.
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InterPro; IPR002518;
InterPro; IPR004109;
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InterPro; IPR002519;
                                                                                                                                                                                                                                                                                                                                                                         GNWVTW
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MEDLINE-91172826; bubmed=1848704;
MEDLINE-91172826; bubmed=1848704;
MEDLINE-91172826; bubmed=1848704;
MEDLINE-91172826; bubmed=1848704;
A Choo O.-L., Richman K.H., Han J.H., Berger K., Lee C., Dong C.,
A Gallegos C., Coit D., Medina-Selby A., Barr P.J., Weiner A.J.,
A Bradley D.W., Kuo G., Houghton M.;
A Bradley D.W., Kuo G., Houghton M.;
A Ganetic organization and diversity of the hepatitis C virus.";
A Gradley D.W., Kuo G., Houghton M.S.A. 88:2451-2455(1991).
A Bradley D.W., Kuo G., Houghton M.S.A. NS2B, NS4A AND NS4B ARE
HYDROPHOBIC, SUGGESTING A POSSIBLE MEMBRANE-RELATED FUNCTION.
NS AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION.
C -!- CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral percursor polyprotein, commonly with Asp or Glu in the P6
position, Cys or Thr in Pl and Ser or Ala in Pl'.
C -!- CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
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01-40G-1992 (Rel. 23, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
16-SEP-2003 (Rel. 42, Last annotation (P22);
16-SEP-2003 (Rel. 42, Last annotation (Rel. 42, Last
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NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
RNA-DIRECTED RNA POLYMERASE (POTENTIAL)
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Viruses; ssRNA positive-strand viruses, no DNA stage; FlavIviridae;
                                                                                                  (BY SIMILARITY).
(BY SIMILARITY).
(BY SIMILARITY).
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CHARGE RELAY SYSTEM
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wes 19; Conserv
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POLG_HCVH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CAPSID PROFEIN ( POTENTIAL).
MATRIX PROTEIN (POTENTIAL).
MAJOR ENVELODE PROTEIN E (POTENTIAL).
NONSTRUCTURAL PROTEIN NS1/E2 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS2 (POTENTIAL).
PROTEASE/HELICASE NS3 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
RNA-DIRECTED RNA POLYMERASE (POTENTIAL).
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    LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS:
PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REMOVED FROM CAPSID PROTEIN C BY THE CELLULAR AMINOPEPTIDASE.
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                                              -1- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY S29
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DECH BOX.
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InterPro; IFR001665; HCV_MSD3.
InterPro; IPR001650; Helicase_C.
InterPro; IPR001095; RNA_pol_DS_PS.
InterPro; IPR007094; RNA_pol_DS_PS.
InterPro; IPR007094; RNA_pol_PSvir.
Pfam; PF01543; HCV_capaid; I.
Pfam; PF01543; HCV_cave; I.
Pfam; PF01539; HCV_mSI; I.
Pfam; PF01539; HCV_NSI; I.
Pfam; PF01001; HCV_NSI; I.
Pfam; PF01001; HCV_NS4; I.
Pfam; PF01001; HCV_NS4b; I.
Pfam; PF01001; HCV_NS4b; I.
Pfam; PF01001; HCV_NS4b; I.
Pfam; PF00998; Viral_RORP; I.
Pfam; PF00998; Viral_RORP; I.
                                                                                                                                                                                                                  InterPro; IPR00252; HCV_capsid.
InterPro; IPR00252; HCV_core.
InterPro; IPR00251; HCV_env.
InterPro; IPR00253; HCV_NS2.
InterPro; IPR002518; HCV_NS2.
InterPro; IPR004109; HCV_NS3.
InterPro; IPR00145; HCV_NS4.
                                                                                                                                                                                                                                                                                                  HCV_NS5a.
                                                                                                                                               EMBL; M62321; AAA45676.1; -.
                                                                                                                                                                                                         InterPro; IPR001410; DEAD.
InterPro; IPR002522; HCV_c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SMART; SM00487; DEXDC; 1
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PDB; 1HEI; 25-NOV-98.
                                                                                                                                                                                                                                                                                                   InterPro; IPR002868;
                                                                                                                                                        PIR; A39166; GNWVC3.
                                                                                                                                                                                       MEROPS; S29.001; -
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INIT_MET
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01-AUG-1992 (Rel. 23, Created)
01-AUG-1992 (Rel. 23, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
66-00me polyprotein (Contains: Capsid protein C (Core protein) (P22);
67-00 (NS1);
68-00 (NS1);
69-00 (NS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X-RAY CRYSTALLOGRAPHY (2.1 ANGSTROMS) OF 1207-1657.
MEDLINE-97331322; PubMed-9187654;
Yao N., Hesson T., Cable M., Hong Z., Kwong A.D., Le H.V., Weber P.C.;
"Structure of the hepatitis C virus RNA helicase domain.";
Nat. Struct. Biol. 4:463-467(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             oligonicleotide: the crystal structure provides insights into the mode of unwinding.":

Structure 6:89-10(1998).

-!-FUNCTION: PROTEASE NS2 IS RESPONSIBLE FOR THE CLEAVAGE OF NS2-NS3.

-!-FUNCTION: PROTEASE NS3 IS RESPONSIBLE FOR THE CLEAVAGE OF NS2-NS3.

-!-FUNCTION: NS4A-NS4B, NS4B-NS5A AND NS5A NS5B.

-!-FUNCTION: NS4A-FORMS A COMPLEX WITH NS3 AND IS ESSENTIAL FOR THE ACTIVATION OF NS3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-98154321; PubMed-9493270;
Kim J.L., Morgenstern K.A., Griffith J.P., Dwyer M.D., Thomson J.A.,
Murcko M.A., Lin C., Caron P.R.;
"Hepatitis C virus NS3 RNA helicase domain with a bound
                                                                                                                                  (POTENTIAL)
(POTENTIAL)
(POTENTIAL)
(POTENTIAL)
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                                                                    (POTENTIAL)
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MEDLINE-92052256; Pubmed-1658800;
Inchauspe G., Zebedee S., Lee D.H.H., Sugitani M., Nasoff M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 3011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
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327197 MW; 65F8C9447FCE5AF9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS) OF 1192-1657.
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Pred. No.
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100.0%;
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CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
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    NONSTRUCTURAL PROTEIN NS5A.
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DECH BOX.
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N-LINKED
N-LINKED
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   CHAIN
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FUNCTION: NS5A SEEMS TO HAVE A TRANSCRIPTIONAL ACTIVATORY ROLE.
FUNCTION: NS5B IS A RNA-DEPENDENT RNA POLYMERASE THAT PLAYS AN
ESSENTIAL ROLE IN THE VIRUS REPLICATION.
CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral
precursor polyprotein, commonly with Asp or Glu in the P6
position, Cys or Thr in P1 and Ser or Ala in P1'.
CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase;
Core protein; Coat protein; Envelope protein; Helicase; ATP-binding;
Transmembrane; Nonstructural protein; Hydrolase; Serine protease;
                                                                                  -! SUBUNITY: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: E1 AND E2. THE NUCLECCAPSID IS A COMPLEX OF PROTEIN C AND MRNA.
-!- PTM: THE STRUCTURAL PROTEINS C, E1 AND E2 ARE PRODUCED BY PROTEOLYTIC PROCESSING BY THE HOST SIGNAL PEPTIDASES.
-!- SIMILARITY: THE NS2 PROTEASE BELONGS TO PEPTIDASE FAMILY 039.
-!- SIMILARITY: THE NS3 PROTEASE BELONGS TO PEPTIDASE FAMILY S29.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REMOVED FROM CAPSID PROTEIN C CELLULAR AMINOPEPTIDASE.
CAPSID PROTEIN C.
ENVELOPE GLYCOPROFEIN E1.
ENVELOPE GLYCOPROTEIN E2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NONSTRUCTURAL PROTEIN NS2.
PROTEASE/HELICASE NS3.
NONSTRUCTURAL PROTEIN NS4A.
NONSTRUCTURAL PROTEIN NS4B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROTEIN P7
                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR002522; HCV_capsid.
InterPro; IPR002521; HCV_capsid.
InterPro; IPR002521; HCV_capsid.
InterPro; IPR002531; HCV_capsid.
InterPro; IPR002531; HCV_NS1.
InterPro; IPR0004109; HCV_NS3.
InterPro; IPR000445; HCV_NS4.
InterPro; IPR001490; HCV_NS4.
InterPro; IPR001490; HCV_NS4.
InterPro; IPR001666; HCV_RRAP.
InterPro; IPR001666; HCV_RRAP.
InterPro; IPR001095; RNA_pol_DS_PS.
InterPro; IPR001095; RNA_pol_DS_PS.
InterPro; IPR001099; RNA_pol_DS_PS.
InterPro; IPR001099; RNA_pol_PSvir.
Pfam; PF01543; HCV_env; I.
Pfam; PF01550; HCV_NS4; I.
Pfam; PF01006; HCV_NS4; I.
Pfam; PF01009; WIRL_RRPP; I.
Probom; PP1086062; HCV_NS1; I.
                                                                                                                                                                                                                                                         EMBL; M67463; AAA45534.1;
                                                                                                                                                                                                                                                                PIR, A36814; GNWCH.
PDB; 1HEI; 25-NOV-98.
PDB; 1A1V; 16-FEB-99.
PDB; 1A1R; 17-JUN-98.
MEROPS; S29,001;
                                                                                                                                                                                                                                                                                                                                    TRANSFAC; T04155; -.
InterPro; IPR001410; D
InterPro; IPR002521; H
InterPro; IPR002511; H
InterPro; IPR002511; H
InterPro; IPR002511; H
InterPro; IPR002511; H
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INIT_MET
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                                                                                                                                                                                                                                                                                 01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence update)
15-SEP-2003 (Rel. 25, Last sequence update)
01-APR-1993 (Rel. 26, Last sequence update)
Genome polyprotein [Contains: Capsid protein C (Core protein) (P22);
Envelope glycoprotein El (GP32) (GP35); Envelope glycoprotein E2
(GP68) (GP70) (NS1); Protein P7; Nonstructural protein NS2 (P21)
(EC 3.4.22.-); Protease/helicase NS3 (P70) (Hepaclylrin)
(EC 3.4.21.98); Nonstructural protein NSA (P4); Nonstructural protein
NSAB (P27); Nonstructural protein NSA (P56); Nonstructural protein
NSAB (P66) (P70) (RNA-directed RNA polymerase) (EC 2.7.7.48)].
Hepatitis C virus (isolate HC-JT) (HCV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE=92295714; PubMed=1318627;
Tanaka T., Kato N., Nakagawa M., Ootsuyama Y., Cho M.J.,
Nakazawa T., Hijikata M., Ishimura Y., Shimotohno K.;
"Moleoular Lohoning of hepatitis C virus genome from a single Japanese
carrier: sequence variation within the same individual and among
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VILLUS RES. 23:39-53 (1992).

-1 FUNCTION: THE SMALL PROTEINS NS2A, NS2B, NS4B AND NS4B ARE HYDROPHOBLE., SUGGESTING A POSSIBLE MEMBERANE-RELATED FUNCTION.

NS3 AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION.

-1 CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral precursor polyprotein, commonly with Asp or Glu in the P6 position, Cys or Thr in P1 and Ser or Ala in P1'.

-1 CATALYTIC ACTIVITY: N nucleoside triphosphate - N diphosphate +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             K
                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (RNA)(N).
-!- SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA.
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                                                                                                                  9.8%; Score 13; DB 1; Length 3011;
100.0%; Pred. No. 0.00013;
ive 0; Mismatches 0; Indels
                      1614 1618
1622 1623
1627 1627
1635 1636
1640 1652
3011 AA; 327142 MW; 772CBB29CCD94753 CRC64;
                                                                                                                                                                                                                                                              PRT; 3010 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; D11168; BAA01943.1; -.
                                                                                                                                                                                             1664 GGVLAALAAYCLS 1676
                                                                                                                                                                     33 GGVLAALAAYCLS 45
                                                                                                                                           Conservative
                                                                                                                                                                                                                                                              STANDARD;
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PDB; 1JXP; 14-JAN-98.
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                                                                                                                              Local Similarity
tes 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                           Hepacivirus.
NCBI_TaxID=31642;
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Q00269;
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SEQUENCE
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CELLULAR AMINOPEPTIDASE.
CAPSID PROTEIN C (POTENTIAL).
MAJRIX PROTEIN (POTENTIAL).
MAJORE ENVELODE PROTEIN E (POTENTIAL).
NONSTRUCTURAL PROTEIN NS1/E2 (POTENTIAL).
NON-STRUCTURAL PROTEIN NS2 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS48 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS48 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS48 (POTENTIAL).
RNA-DIRECTED RNA POLYMERASE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                             Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase; Core protein; Coat protein; Envelope protein; Helicase; ATP-binding; Transmembrane; Nonstructural protein; Hydrolase; Serine protease;
                                                                                                                                                                                                                                                                                                                                                                                  REMOVED FROM CAPSID PROTEIN C BY THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
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100.0%; Pred. No. v.
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                                             HCV_capsid.
          IPR002521; HCV_core.
IPR002519; HCV_env.
IPR002531; HCV_NS1.
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2077 207
2240 224
2529 252
2788 278
3010 AA;
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Best Local Similarity
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INIT_MET
                        InterPro;
InterPro;
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ACT_SITE
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Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
       OR RV3145 OR MT3233 OR MTCY03A2.13C.
                                          Mycobacterium tuberculosis.
                                                                                                                                                  NCBI_TaxID=1773;
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C STRAIN-Z / ATC 12894;

C STRAIN-Z / ATC 12894;

MEDILNE-95325066; PubMed=7542887;

Maier Jo, Witter K., Guetlich M., Ziegler I., Werner T., Ninnemann H.;

RA Maier Jo, Witter K., Guetlich M., Ziegler I., Werner T., Ninnemann H.;

RT "Homology cloning of GTP-cyclohydrolase I from various unrelated

RT "Homology cloning of GTP-cyclohydrolase I from various unrelated

RT Gegeneral set of degenerate primers.";

RL Biochem. Blophys. Res. Commun. 212.705-711(1995).

C - CAPALYITC ACTIVITY: GTP + 2 H(2)0 = formate + 2-anino-4-hydroxy-6-

CC (ETYLINIC ACTIVITY: GTP + 2 H(2)0 = formate + 2-anino-4-hydroxy-6-

CC (ETYLINIC ACTIVITY: GTP + 2 H(2)0 = formate + 2-anino-4-hydroxy-6-

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30-MAY-2000 (Rel. 39, Last sequence update)
38-FEB-2003 (Rel. 41, Last annotation update)
NADH-quinone oxidoreductase chain A (EC 1.6.99.5) (NADH dehydrogenase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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PIR: S54909; S54909.

HSSP; PJZ511; 1GTP.
InterPro; IPR001474; GTP_cyclohydrol.
Probom; PF01227; GTP_cyclohydrol: 1.
Probom; PD003330; GTP_cyclohydrol: 1.
PROSITE; PS00859; GTP_CYCLOHYDROL. 1.
PROSITE; PS00860; GTP_CYCLOHYDROL. 1.

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                                                                                                                                                                                                                                                                                                                         01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
GTP cyclohydrolase I (EC 3.5.4.16) (GTP-CH-I) (Fragment).
Euglena gracilis.
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100.0%; Pred. No. 6.9;
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                                      1664 GGVLAALAAYCL 1675
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33 GGVLAALAAYCL 44
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nes 7; Conserv
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                                                                                                                                                                                                                                                           GCH1_EUGGR
P51597;
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P95181;
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                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN=CDC 1551 / Oshkosh;
STRAIN=CDC 1551 / Oshkosh;
Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,
Peterson J., DeBoy R., Dodson R., Gwinn M.L., Haft D., Hickey E.,
Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg S.L.,
Delcher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula A.,
                                                                                    Harris D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Whole genome comparison of Mycobacterium tuberculosis clinical and
                                                                        Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C., Harris Gordon S.V., Eiglmeler K., Gas S., Barry C.E. III, Tekaia F., Badacock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd S. Oldrer S., Osborne J., Quall M., McLean J., Moule S., Murphy L., Chilersby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L., Sulston J.E., Seeger K., Skelton S., Squares S., Seeger K., Skelton S., Squares S., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; Deciphering the blology of Mycobacterium tuberculosis from the complete genome sequence.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TIGR; MT3233;
Tuberculist; Rv3145; -.
Tuberculist; Rv3145; -.
Interpro; IPR000440; Oxidored_q4.
Pfan; PF0057; oxidored_q4; 1.
Oxidoreductase; NAD; Quinone; Transmembrane; Complete proteome.
TRANSMEM 5 25
POTENTIAL.
72 92 POTENTIAL.
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                                                   MEDLINE-98295987; PubMed-9634230;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AE007138; AAK47572.1;
PIR; B70647; B70647.
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Best Local Similarity 100..
Fra 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; Z83867; CAB06271.1;
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SEQUENCE FROM N.A.
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YQGA_ECOLI
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                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                       **MEDLINE=91306449; PubMed=1853567; Bamcord J.K.H., Haenninen A.-L., Pakula T.M., Ojala P.M., Bamford J.K.H., Haenninen A.-L., Pakula T.M., Ojala P.M., Kalkkinen N., Frilander M., Bamford D.H.; Bamford D.H.; Genome organization of membrane-containing bacteriophage PRDI."; Virology 183:658-676(1991).

**PUNCTION: THE MAJOR COAT PROTEIN P3 AND TWO ASSEMBLY FACTORS (P10 & P17) ARE NEEDED DURING THE ASSEMBLY OF THE VIRUS PARTICLE INSIDE THE HOST CELL, WHEN THE CAPSID PROTEIN MULTIMERS ARE CAPABLE OF ENCLOSING THE VIRAL MEMBRANE FROM THE HOST PLASMA MEMBRANE CONTAINING THE VIRUS-ENCODED MEMBRANE-ASSOCIATED PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-DED-2003 (Rel. 41, Last annotation update)
2-C-methyl-D-erythritol 4-phosphate cytidylyltransferase (EC 2.7.7.60)
(4-diphosphocytidyl-2C-methyl-D-erythritol synthase) (MEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans and genomic sequence comparison with Bacillus subtilis."; Nucleic Acids Res. 28:4317-431(2000).

-i. FUNCTION: CATALYZES THE FORMATION OF 4-DIPHOSPHOCYTIDYL-2C-METHYL-D-ERYTHRITOL FROM CTP AND 2C-WETHYL-D-ERYTHRITOL 4-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Takami H., Nakasone K., Takaki Y., Maeno G., Sasaki R., Masui N.,
Fuji F., Hirama C., Nakamura Y., Ogasawara N., Kuhara S.,
Horikoshi K.;
                                                                                                                    Viruses; dsDNA viruses, no RNA stage; Tectiviridae; Tectivirus.
NCBL_TaxID=10658;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5.3%; Score 7; DB 1; Length 203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                          PIR; E36777; WMBPTB.
Pfam; PF02178; AT_hook; 2.
SEQUENCE 203 AA; 20688 MW; 064C2BB9C08151D9 CRC64;
                                      01-DEC-1992 (Rel. 24, Created)
01-DEC-1992 (Rel. 24, Last sequence update)
01-DEC-1992 (Rel. 24, Last annotation update)
               203 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. 14;
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                228 AA.
                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (sor send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M69077; -; NOT_ANNOTATED_CDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN~C-125 / JCM 9153;
MEDLINE=20512582; PubMed=11058132;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cytidylyltransferase) (MCT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAPYIEQ 196
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     83 AAPYIEQ 89
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus halodurans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Local Similarity
nes 7; Conserv
                                                                                                         Bacteriophage PRD1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=86665;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ISPD_BACHD
Q9KGF8;
                                                                               Protein P10
            VP10_BPPRD
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VP10_BPPRD
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                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                     diphosphate + 4-(cytidine 5'-diphospho) -2-C-methyl-D-rrythitol.
-!- PATHWAY: Nonmevalonate terpenoid biosynthesis pathway; third step.-!- SIMILARITY: BELONGS TO THE ISPD FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
STRAIN-KIZ. / MG165;
STRAIN-KIZ. / MG165;
PUDMEDLINE-97426617; PubMed-9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Mau B., Shao Y.;
CTP + 2-C-methyl-D-erythritol 4-phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "The complete genome sequence of Escherichia coli K-12.";
Science 277:1453-1474(1997).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PROSITE; PS01295; ISPD; 1.
Transferase; Nucleotidyltransferase; Isoprene biosynthesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
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01-NOV-1997 (Rel. 35, Last sequence update)
01-CCT-2001 (Rel. 40, Last annotation update)
Hypothetical protein yggA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .5.3%; Scc...
100.0%; Pred. No. ...
                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AP001507; BAB03826.1; -.
PIR; C03663; C03663.
HSSP; Q46893; 1152.
HAMAP; MF_00108; -; 1.
InterPro; IPR001228; ISPD_synthase.
Pfan; PF01128; ISPD, 1.
PIRSF; PIRSF006765; DPCME_synth; 1.
TIGRFAMS; TIGR00453; ISPD; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
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PIR; E65082, E65082.
EcoGene; EG12987; Y9GA.
Pfam; PF04474; DUF554; 1.
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Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
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YQGA OR B2966.
Escherichia coli.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
2-C-methyl-D-erythritol 4-phosphate cytidylyltransferase (EC 2.7.7.60)
(4-diphosphocytidyl-2C-methyl-D-erythritol synthase) (MEP
cytidylyltransferase) (MCT)
ISPD OR RSC1643 OR RS04018
Ralstonia solanacearum (Pseudomonas solanacearum).
Bacteria: Proteobacteria: Betaproteobacteria: Burkholderiales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              phosphate (By similarity).

- CATALYTIC ACTIVITY: CTP + 2-C-methyl-D-erythritol 4-phosphate = diphosphate + 4-(cytidine 8-diphospho)-2-C-methyl-D-erythritol.

- PATHWAY: Nonmevalonate terpenoid biosynthesis pathway; third step.
                                                                                                                                                                                                                                                                                                               Gaps
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Transferase; Nucleotidyltransferase; Isoprene biosynthesis;
                                                                                                                                                                                                                                                         Length 235;
                                                                                                                                                                                                                                                                                                               0; Indels
  Transmembrane; Complete proteome.
                                                                                                                                                                                                          CC89D2A93FED29EA CRC64;
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                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                       5.3%; Score
100.0%; Pred. No. 10,
0; Mismatches
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                                                                                               POTENTIAL.
POTENTIAL.
POTENTIAL.
POTENTIAL.
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InterPro; IPR001228; ISPD_synthase.
Pfam. PF01128; ISPD; 1
PIRSF; PIRSF006765; DFCME_synth; 1.
TIGREAMS; TIGR00453; ISPD; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
STRAIN-GMI1000;
MEDLINE-21681879; Pubmed-11823852;
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                                                                                                                                                                                                       24614 MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Burkholderiaceae; Ralstonia.
NCBI_TaxID=305;
                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                          22
54
76
122
167
230
  Hypothetical protein;
                                                                                                                                                  178
210
235 AA;
                                                                                                                                                                                                                                                                                                                                                            30 VLLGGVL 36
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12 VLLGGVL 18
                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 7; Conserv
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TRANSMEM
TRANSMEM
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SEQUENCE
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ISPD_RALSO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-95394836; PubMed-7665508;
Thibbut D., Ratet N., Bisch D., Faucher D., Debussche L., Blanche F.;
Thibbut D., Ratet N., Bisch D., Faucher D., Debussche L., Blanche F.;
Purification of the two-enzyme system catalyzing the oxidation of
the D-proline residue of pristinamycin IIB during the last step of
pristinamycin IIA blosynthesis.";
J. Bacteriol. 177:51995505(1995).

-I. FUNCTION: CATALYZES THE OXIDATION OF THE PROLINE RESIDUE OF
PRISTINAMYCIN IIB (PIIB) TO PRISTINAMYCIN IIA (PIIA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -!- COFACTOR: FMN.
-!- SUBUNIT: HETERODIMER OF TWO SUBUNITS, SNAA AND SNAB.
-!- SIMILARITY: SOME SIMILARITY TO THE NTAA/SNAA/DSZA(SOXA) FAMILY OF MONOOXYGENASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Blanc V., Lagneaux D., Didder P., Gil P., Lacroix P., Crouzet J.; "Cloning and analysis of structural genes from Streptomyces pristinaespiralis encoding enzymes involved in the conversion of pristinamycin IIB to pristinamycin IIA (PIIA): PIIA synthase and NADH:riboflavin 5'-phosphate oxidoreductase."; J. Bacteriol. 177:5206-5214(1995).
                                    ;
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                                                                                                                                                                                                                                        01-ocT-1996 (Rel. 34, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
Pristinamycin IIA synthase subunit B (PIIA synthase subunit
                                                                                                                                                                                                                                                                                                                                                   Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
 Length 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5.3%; Score 7; DB 1; Length 276;
100.0%; Pred. No. 18;
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                                                                                                                                                                                                                                                                                                                                                                       Streptomycineae; Streptomycetaceae; Streptomyces.
NCBI_TaxID=38300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oxidoreductase; Monooxygenase; Flavoprotein; FMN
5.3%; Score 7; DB 1;
100.0%; Pred. No. 17;
iive 0; Mismatches
                                                                                                                                                                                                       276 AA.
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                                                                                                                                                                                                                                                                                                                                  Streptomyces pristinaespiralis.
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Query Match
Best Local Similarity 100.vv
France 7; Conservative
                                    7; Conservative
                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                       102 LGLLQRA 108
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185 LGLLQRA 191
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               Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                      01-0CT-1996 (Rel
                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-SP92
                                                                                                                                                                                                       SNAB_STRPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AMPM_PYRFU
P56218;
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 Query Match
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AMPM_PYRFU
ID AMPM_PY
AC P56218
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7; Conservative
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      Pyrococcus horikoshii.
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NCBI_TaxID=53953;
                                                                                                                                                                                                                                                                       AMPM_PYRHO
058362;
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      the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
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MEDLINE-99030464; PubMed-9811545;
Tahirov T.H., Oxi H., Tsukihara T., Ogasahara K., Yutani K., Ogata K.,
Izu Y., Tsunasawa S., Kato I.;
"Crystal structure of methionine aminopeptidase from hyperthermophile,
                                                                                              Archaea; Euryarchaeota; Thermococci; Thermococcales; Thermococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cobalt; 3D-structure; Complete proteome.
                                                                                                                                                                                                                                                   X-RAY CRYSTALLOGRAPHY (1.75 ANGSTROMS).
MEDLINE-98234705; PubMed-9573622;
Tahirov T.H., Oki H., Tsukihara T., Ogasahara K., Yutani K.,
Libeu C.P., Izu Y., Tsunasawa S., Kato I.;
"High-resolution crystals of methionine aminopeptidase from Pyrococcus furiosus obtained by water-mediated transformation.";
J. Struct. Biol. 121:68-72(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Methionine aminopeptidase (EC 3.4.11.18) (MAP) (Peptidase M).
Pyrococcus furiosus.
                                                                                                                                                                         STRAIN-VC1 / DSM 3638 / ATCC 43587 / JCM 8422;
Watss R.B., Dunn D.M., Robb F.T., Brown J.R.;
"The complete sequence of the Pyrococcus furiosus genome.";
Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.
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InterPro; IPR001714, Methamino_Prase.
InterPro; IPR001714, Methamino_Prase.
Ffam; PF00557; Peptidase_M24.
PRINTS; PR00599; MAPEPTIDASE.
TIGRRAMS; TIGR00501; met_pdase_II; 1.
PROSITE; PS01202; MAP_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AE010177; AAL80665.1; -. PIR; JC5671; JC5671. PDB; IXGM; 25-FEB-98. PDB; IXGM; 25-FEB-98. PDB; IXGO; 25-FEB-98. PDB; IXGO; 25-FEB-98. PDB; IXGO; 25-FEB-98.
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MEDLINE-98344137; Pubmed-9679194;
Kawarabayasi Y., Sawada M., Horikawa H., Haikawa Y., Hino Y.,
Yamamoto S., Sekine M., Baba S.-I., Kosugi H., Hosoyama A., Nagai Y.,
Sakai M., Ogura K., Otsuka R., Nakazawa H., Takamiya M., Ohfuku Y.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Archaea; Euryarchaeota; Thermococci; Thermococcales; Thermococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Methionine aminopeptidase (EC 3.4.11.18) (MAP) (Peptidase M).
                                                                   Length 295;
                                                                                                                                          0; Indels
32842 MW; 9739BC55F812E65B CRC64;
                                                                   5.3%; Score 7; DB 1;
100.0%; Pred. No. 20;
tive 0; Mismatches
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82 COBALT 2 (By similarity).
93 COBALT 1 AND 2 (By similarity).
53 COBALT 1 (By similarity).
87 COBALT 1 (By similarity).
80 COBALT 1 AND 2 (By similarity).
81 COBALT 1 (By similarity).
82 COBALT 1 AND 2 (By similarity).
83 COBALT 1 AND 2 (By similarity).
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100.0%; Pred. No. 20;
tive 0; Mismatches
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InterPro: IPR001714; Methamino_PTase.
InterPro: IPR000994; Peptidase_M24.
Pfam: PF00557; Peptidase_M24; 1.
                                                                                                                                                                                                                                                                                                                                                                                               PRINTS; PRO059; MAPEPTIDASE.
TIGREAMS; TIGR00501; met_pdase_II; 1.
PROSITE; PS01202; MAP_2; 1.
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MEDLINE-92349436; PubMed-7683463;
Stuyver L., Arnhem W.V., Wyseur A., Deleys R., Maertens G.;
Stuyver L., Arnhem W.V., Wyseur A., Deleys R., Maertens G.;
Type 3.";
Blochem. Blochem. Blophys. Res. Commun. 192:635-641(1993).
BSSP; P27958; 1HEI.
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iive 0; Mismatches 0; Indels
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                                                             IPR001490;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Genome polyprotein.
Hepatitis C virus.
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384
736
1013
1664
1718
1979
                                    InterPro;
InterPro;
InterPro;
                                                                                                                          InterPro;
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CHAIN
CHAIN
CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               092933
         DOR NOOR CONTRACTOR CO
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"Hepatitis C virus type V genome isolated from a patient in Germany.";
Submitted (JAN-1995) to the EMBL/GenBank/DDBJ databases.
-!- SUBMINI: THE VIRION OF THIS VIRUS IS A NUCLECCAPSID COVERED BY A
LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS:
PROTEIN M AND GLYCOPROTEIN E. THE NUCLECCAPSID IS A COMPLEX OF
PROTEIN C AND MRNA (BY SIMILARITY).

EMBL; X76918; CAA5444.1; -.
HSSP: P27958; IA1V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
MEDLINE-91249436; Pubmed-7683463;
Stuyver L., Arnhem W.V., Wyseur A., Deleys R., Maertens G.;
Stuyver L., Arnhem W.V., Wyseur A., Deleys R., Maertens G.;
Analysis of the putative B1 envelope and NS4a epitope region of HCV type 3.";
Blochen. Biophys. Res. Commun. 192:635-641(1993).
Blochen. Biophys. Res. Commun. 192:635-641(1993).
HSSP; P27958; IHEI.
InterPro; IPR000745; HCV_NS4a.
Pfam: PF01006; HCV_NS4a: 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polyprotein).
Hepatitis C virus.
Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                       Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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100.0%; Pred. No. 5e-43;
Live 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133 AA; 14781 MW; 4BFF2128FD301691 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   068870;
01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Genes for core, envelope and NS1 proteins (Genome
137 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 174
                                                                                                                                                                                                                                                                    01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Nonstructural protein 4 (Fragment).
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                                                                                                                                                                                                                                               01, Created)
                                                                                                                                                                                    PRT;
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HCV_core.
HCV_env.
HCV_NSI.
HCV_NS2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ouery Match
Best Local Similarity 100..
                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                      01-NOV-1996 (TrEMBLrel.
01-NOV-1996 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
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InterPro; IPR002519;
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IPR002518;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                         Hepatitis C virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID-11103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hepacivirus.
NCBI_TaxID-11103;
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NON_TER
SEQUENCE
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                                                                                                                                                                                 081595
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                                                                                                                    RESULT 2
Q81595
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Q68870
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InterPro;

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STRAIN-type 3a;
Shukla D.D., Chaturvedi S., Cao J.Y., Hoyne P.A.;
"Complete Nucleotide Sequence of the genome of Hepatitis C Virus type
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PROSITE; PS50521; RDRP_VIRAL; 1.
Coat protein; Bnvelope protein; Glycoprotein; Nonstructural protein;
Coat protein; RN-directed RNA polymerase; Transferase; Transmembrane.
CHAIN 191 CORE PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepocivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1648 TKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPA 1699
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    BF2B499AA55A58CF CRC64;
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Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                  ENVELOPE PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      39.1%; Scc...
100.0%; Pred. No. '...
'... 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                          LANGE PROTEIN.
NS2 PROTEIN.
NS3 PROTEIN.
NS4A PROTEIN.
NS4B PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                      NS5A PROTEIN.
NS5B PROTEIN.
                                          InterPro; IPR007095; RNA_pol_DS_PS.
InterPro; IPR007094; RNA_pol_DS_PS.
Pfam; PF01543; HCV_capsid; 1.
Pfam; PF01543; HCV_core; 1.
Pfam; PF01539; HCV_env; 1.
Pfam; PF01559; HCV_env; 1.
Pfam; PF01560; HCV_NS; 1.
Pfam; PF01560; HCV_NS; 1.
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InterPro; IPR002522; HCV_capsid.
InterPro; IPR002521; HCV_core.
IPR001490; HCV_NS4b.
IPR002868; HCV_NS5a.
IPR002166; HCV_RdRP.
                                                                                                                                                          Pfam; PF01006; HCV_NS4a; 1.
Pfam; PF01001; HCV_NS4b; 1.
Pfam; PF01006; HCV_NS5a; 1.
Pfam; PF00998; Viral_RGRP; 1.
Probom; PD186062; HCV_NSI; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1998 (TrEMBLrel. 08, 01-NOV-1998 (TrEMBLrel. 08, 01-MAR-2003 (TrEMBLrel. 23,
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"Sequence analysis of hepatitis C virus variants producing discrepant results with two different genotyping assays.";
J. Med. Virol. 53:237-244(1997).
EMBL; AF007504; AAB6255.2; -.
InterPro; IPR00745; HCV_N34a.
Pfam; PF01006; HCV_NS4a; 1.
                                                                                                                                                                                                                                                                                  SMART; SM00487; DEXDC: 1.
PROSITE; PS00435; PERXOIDASE_1; 1.
PROSITE; PS50507; RDRP_DOSITIVE; 1.
Coat protein; Envelope protein; Glycoprotein; Nonstructural protein;
POlyprotein; RNA-directed RNA polymerase; Transferase; Transfembrane.
POLIPPORT 1 191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Prescott L.E., Berger A., Pawlotsky J.M., Conjeevaram P., Pike I.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32.3%; Score 43; DB 12; Length 3021; 100.0%; Pred. No. 5.1e-33; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  329574 MW; 38712CCBC0C19562 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15 MACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIEL 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7743 MW; 818D296E0E488DB1 CRC64;
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01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-CT-2002 (TrEMBLrel. 22, Last annotation update)
Non-structural protein 4a/b (Fregment).
InterPro; IPPR004109; HCV_NS3.
InterPro; IPR00145; HCV_NS4a.
InterPro; IPR001409; HCV_NS4a.
InterPro; IPR001409; HCV_NS4b.
InterPro; IPR002166; HCV_NS6a.
InterPro; IPR002166; HCV_RGRP.
InterPro; IPR002016; Peroxidase.
InterPro; IPR007094; RNA_pol_BS_FS.
InterPro; IPR007094; RNA_pol_PSvir.
Pfam; PP01542; HCV_cappid; 1.
Pfam; PF01543; HCV_cappid; 1.
Pfam; PF01560; HCV_NS1; 1.
Pfam; PF01560; HCV_NS1; 1.
Pfam; PF01006; HCV_NS4; 1.
Pfam; PF01006; HCV_NS4a; 1.
Pfam; PF01006; HCV_NS4a; 1.
Pfam; PF01006; HCV_NS4a; 1.
Pfam; PF01006; HCV_NS5a; 1.
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E2/NS1.
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NS4B.
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MEDLINE-98032593; PubMed-9365889;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43; Conservative
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384 77
736 101
1013 164
1664 171
1718 197
1979 243
3021 AA;
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NCBI_TaxID=11103;
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SEQUENCE
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039899
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-!- SUBMITT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS:
PROTEIN M AND GLYCOPROTEIN B. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA (BY SIMILARITY).
EMBL; D17763; BAA04609.1; -.
HSSP; P27958; IHEI.
                                                                                                                                                                                                                                                                                                                                                                             Transmembrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Coat protein; Envelope protein; Glycoprotein; Nonstructural
Polyprotein; RNA-directed RNA polymerase; Transferase; Trans
SEQUENCE 3021 AA; 328903 MW; D786133B330303CD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                      Length 3021;
                                                                                                                                                                                                                                                                                                                                                                                                                     / Match 36.1%; Score 48; DB 12; Length 30:
Local Similarity 100.0%; Pred. No. 6.3e-38;
Nes 48; Conservative 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT; 3021 AA.
         PROSITE; PS50507; RDRP_POSITIVE; 1. PROSITE; PS50521; RDRP_VIRAL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HCV_capsid.
HCV_core.
HCV_env.
HCV_NS1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR001410; DEAD.
InterPro; IPR002522; HCV_c
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR002518;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Genome polyprotein. Hepatitis C virus.
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MEROPS; U39.001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=NZL1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sakamoto M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Okamoto H.;
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Matches
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Q81258
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Gaps

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Length 90;

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.90 AA; 10000 MW; 15465423A211108B CRC64;
                    26.3%; Score 35; DB 12; 1 larity 100.0%; Pred. No. 1.7e-26; Conservative 0; Mismatches 0;
                                                                           25 VPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 59
                                                               64 VPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
                               Best Local Similarity
Matches 35; Conserv
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NON_TER
SEQUENCE
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J. Med. Virol. 53:237-244(1997).
EMBL. AF007503. AAB625454.2;
InterPro; IPR000745; HCV_NS4a.
Pfam; PF01006; HCV_NS4a:
1.
NON_TER 88
SEQUENCE 88 AA; 9838 MW; 91FDFHC4FNN171FF CDC41.
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J. Med. Virol. 0:0-0(1997).

InterPro. IPR007509; AAB62960.1; -.

InterPro. IPR000745; HCV_NS4a.

Pfam. PF01006; HCV_NS4a: 1.

NON_TER 90 90
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NCBI_TaxID=11103;
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Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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Simmonds P.,
                                                                                                                                                                                                                                                                    STRAIN=GD_1.1;
MEDLINE-98032593; PubMed-9365889;
Prescott L.E., Berger A., Pawlotsky J.M., Conjeevaram P., Pike I.,
Simmonds P.;
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          Length 70;
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Last sequence update)
Last annotation update)
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01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Non-structural protein 4a/b (Fragment).
       Query Match 26.3%; Score 35; DB 12; I
Best Local Similarity 100.0%; Pred. No. 1.4e-26;
Matches 35; Conservative 0; Mismatches 0;
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100.0%; Pred. No. 1.7e-26;
Live 0; Mismatches 0;
                                                    64 VPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
                                                                 22 VPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 56
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Best Local Similarity 100.
Matches 35; Conservative
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J. Med. Virol. 0:0-0(1997).
EMBL; AF007511; AAB62962.1; -.
InterPro; IRR000745; HCV_NS4a.
Pfam; PF01006; HCV_NS4a: 1.
NON_TER 1 1.
NON_TER 90 90
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Hepacivirus.
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Hepecivirus.
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90 AA; 10031 MW; DC7CDBE6E881109C CRC64;
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Last annotation update)
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Last annotation update)
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J. Med. Virol. 0:0-0(1997).
EMBL; AF007513; AAB62964.1; -.
InterPro; IPR000745; HCV_NS4a.
Pfam; PF01006; HCV_NS4a; 1.
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                                        01-JAN-1998 (TrEMBLrel. 05, Created)
01-JAN-1998 (TrEMBLrel. 05, Last sequen
01-DEC-2001 (TrEMBLrel. 19, Last annotain
Non-structural protein 4a/b (Fragment).
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01-JAN-1998 (TIEMBLrel. 05, Last seque)
01-DEC-2001 (TIEMBLrel. 19, Last annot.
Non-structural protein 44/b (Fragment)
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Best Local Similarity 100.u
"...hes 35; Conservative
PRELIMINARY;
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Gaps

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Length 138;

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"Sequence analysis of hepatitis C virus variants producing discrepant results with two different genotyping assays.";
J. Med. Virol. 53:237-244(1997).
BENEL, AF007501; AB62952.2;
InterPro; IPR007045; HCV_NS4a.
Pfam; PF01006; HCV_NS4a: 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Sequence analysis of Hepatitis C virus variants producing discrepant results with two different genotyping assays.";
J. Med. Virol. 0:0-0(1997).
EMBL; AR007505; ARB62956.1; -.
InterPro; IPR000745; HCV_NS4a.
Pfam; PF01006; HCV_NS4a; 1.
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Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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Hepacivirus.
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138 AA; 15311 MW; B45AC0F8917DBAAC CRC64;
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Last annotation update)
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Last annotation update)
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                                        Score 35; DB 12;
Pred. No. 2.5e-26;
                                                                                                                                             64 VPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
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                                                   100.0%; Prea. ....
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MEDLINE=98032593; Pubmed=9365889;
                                          26.3%;
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01-JAN-1998 (TrEMBLrel. Ö5,
01-DEC-2001 (TrEMBLrel. 19,
01-MAR-2002 (TrEMBLrel. 20,
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                                                           Best Local Similarity
Matches 35; Conserv
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Prescott L.E., Berger A., Pawlotsky J.-M., Conjeevaram P., Pike I.,
Simmonds P.;
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Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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                     Length 90;
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
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Last annotation update)
                 DB 12; Le
1.7e-26;
thes 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            results with two different genotyping assays.";
J. Med. Virol. 0:0-0(1997).
EMBL; AF007515; AAB62966.1; -.
InterPro; IPR000745; HCV_NS4a.
Pfam; PF01006; HCV_NS4a; 1.
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                                                                                                    64 VPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
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                 26.3%; Score 35; DB 100.0%; Pred. No. 1.7; Ive 0; Mismatches
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01.JAN-1998 (TrEMBLrel. 05, Last sequen
01.DEC-2001 (TrEMBLrel.) 9, Last annota
Non-structural protein 4a/D (Fragment).
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EMBL. U14275; AAC53964.1; -.
HSSP, P27958; 1HEI.
INTERPLO; IPR000745; HCV_NS4a.
Pfam; PF01006; HCV_NS4a; 1.
                                        Best Local Similarity 100.0
Matches 35; Conservative
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ses 35; Conserv
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NCBI_TaxID=11103;
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                     Query Match
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NON_TER
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Matches
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039910
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Length 83; Indels

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J. Med. Virol. 53:237-244(1997).
BABL, AF0075223, AABG-2973.2;
Interpro; IPR000745; HCV_NS4a.
Pfam; PF01006; HCV_NS4a;
NON_TER 84 84
SEQUENCE 84 AA; 9360 MW; 88E9F6DBE6E66DA7 CRCF4.
                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hepatitis C virus.
Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prescott L.E., Berger A., Pawlotsky J.M., Conjeevaram P., Pike I., Simmonds P.;
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                                                                                                                         Length 84;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 23.3%; Score 31; DB 12; Length 84 Best Local Similarity 100.0%; Pred. No. 1.4e-22; Matches 31; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                    0; Indels
NON_TER 84 84 84 SEQUENCE 84 AA; 9343 MW; 135FFAB56ADD4D16 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                  Ouery Match 23.3%; Score 31; DB 12; 18est Local Similarity 100.0%; Pred. No. 1.4e-22; Matches 31; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84 AA.
                                                                                                                                                                                                                                                                                                                  28 EVLYQOYDEMEECSQAAPYIEQAQVIAHQFK 58
                                                                                                                                                                                                                                                                           68 EVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        68 EVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   24 EVLYQQYDEMEECSQAAPYIEQAQVIAHQFK 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JAN-1998 (TrEMBLrel. 05, Created)
01-JUN-2002 (TREMBLrel. 11, Last seque)
01-CCT-2002 (TrEMBLrel. 22, Last annot...)
Non-structural protein 4a/b (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=FD_4;
MEDLINE=98032593; PubMed=9365889;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
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Search completed: August 29, 2003, 11:25:01 Job time : 31 secs

GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

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OM protein - nucleic search, using frame_plus_p2n model

Run on:
August 29, 2003, 12:52:20; search time 1822 Seconds

(without alignments)
1774.147 Million cell updates/sec
Perfect score: 133
Sequence: 133
Scoring table: OLIGO
Xgapext 60.0
Xgapep 60.0, Xgapext 60.0
Ygapep 60.0, Ygapext 60.0
Ygapep 60.0, Ygapext 60.0
Ygapep 60.0, Ygapext 60.0
Searched: 22781392 seqs, 12152238056 residues
```

Post-processing: Listing first 45 summaries

Minimum DB seq length: 0 Maximum DB seq length: 200000000

45562604

Total number of hits satisfying chosen parameters:

Word size:

	Command Line parameters: -MODEL=frame+ p2n.model -DEV=xlh	-Q=/cgn2_1/USPTO_spool/US09638693/runat_25082003_173340_22273/app_query.fasta_1.327 -DB-EST -OFMT-fastap -SUFFIX=oll.rst -MINMATCH=0.1 -LOOPCH=0 -LOOPEXT=0	-UNITS=bits -START=1 -END=-1 -MATRIX=Oligo -TRANS=human40.cd1 -LIST=45	-DOCALIGN-200 -THR_SCORE-quality -THR_MIN-1 -ALIGN-15 -MODE-LOCAL -OUTFMT-pto	-NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000	-USER=US09638693_@CGN_1_1_2810_@runat_25082003_173340_22273 -NCPU=6 -ICPU=3	-NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG	-DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6
Command line parameters: -MODEL=frame+_D2n.model -DEF-x1h -Q-Cgn2_1/USFTC_spool/US09638693/runat_25082003_173340_22273/app_query.fasta_1.327 -Q-Cgn2_1/USFTC_spool/US09638693/runat_25082003_173340_22273/app_query.fasta_1.327 -DB-EST -QFMT-fastap -SUFFIX-oli.rst -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0 -UNITS=blis -START=1 -END=-1 -MATRIX-oligo -TRANS-+mman40.cdl -LIST=45 -UNITS=blis -START=1 -END=-1 -MATRIX-oligo -TRANS-+mman40.cdl -LIST=45 -DOCALIGN=200 -THR_SCORE-quality -THR_MIN-1 -ALIGN=15 -MODE-LOCAL -OUTFMT-pto -NORM-ext -HEAPSIZE=500 -MINLEN-0 -MAX.EN=200000000 -USRR-USGSG93_GCN-1_1_2810_erunat_25082003_173340_22273 -NCPU-6 -ICPU-3 -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_ITMEOUT=30 -THREADS-1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6	-Q=/cgn2_1/USPTO_spool/US09638693/runat_25082003_173340_22273/app_query.fasta_1.327 -DB=EST -OFMT-fastap -SUFFIX-011.rst -WINMATCH=0.1 -LOOPCL=0 -LOOPEXT-0 -UNITS=blts -START=1 -END=-1 -MATRIX-01190 -TRANS-human40.cdi -LIST-45 -DOCALIGN=200 -THR_SCORE-quality -THR_MIN=1 -ALIGN=15 -MODE=LOCAL -OUTFWT-pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000 -USBR-US09638693_eCN_1_L25810_erunat_25082003_173340_22273 -NCPU-6 -ICPU-3 -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_INEOUT=120 -WARN_ITMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6	-UNITS=bits -START=1 -END1 -MATRIX-oligo -TRANS-human40.cd1 -LIST-45 -DOCALIGN-200 -THR_SCORE-quality -THR_MIN-1 -ALIGN-15 -MODE-LOCAL -OUTEMT-pto -NORM-ext -HEAPSIZE=500 -MINLEN-0 -MAXLEN-200000000 -USR-USO9638693_eCGN_1_1_2810_erunat_250820003_173340_22273 -NCPU-6 -ICPU-3 -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6	-DOCALIGN=200 -THR_SCORE-quality -THR_MIN=1 -ALIGN=15 -MODE=LOCAL -OUTFMT-pto -NORM-ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=200000000 -USER=USO9638693_eCGN_1_1_2810_erunat_250820003_171340_22273 -NCPU-6 -ICPU=3 -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6	-NORM-ext -HBAPSIZE-500 -MINLEN-0 -MAXLEN-2000000000 -USER-USO9638693_eCGN_1_1_2510_erunat_25082003_173340_22273 -NCPU-6 -ICPU-3 -NO_MMAP -LARGEQUERY -NEG_SCORES-0 WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6	-USSR-USO9638693_GCGN_1_1_2510_erunat_25082003_173340_22273 -NCPU-6 -ICPU-3 -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -NAIT -DEPSPLOCK-100 -LONGLOG -DEV_TIMEDUT-120 -NARN_ITIMEOUT-30 -THREADS-1 -XGAPOP-60 -XGAPET-60 -FGAPOP-6	-NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6	-DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6	
Command line parameters: -MODEL-frame+_D2n.model -DEV=x1h -Q=/Cgn2_1/USPTO_spool/US09638693/runat_25082003_173340_22273/app_query.fasta_1.327 -Q=/Cgn2_1/USPTO_spool/US09638693/runat_25082003_173340_22273/app_query.fasta_1.327 -DB=EST -OFMT=fastap -SUFFIX=011.rst -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0 -UNITS=blts -START=1 -END=-1 -MATRIX=0.0150 -UNITS=blts -START=1 -END=-1 -MATRIX=0.0150 -UNITS=blts -START=1 -END=-1 -MATRIX=0.00000000 -USPR=US09638693_eCGN_1 1_2810_erunat_25082003_173340_22273 -NCPU=6 -ICPU=3 -NO_MARP -LARGEQUERY NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THRANDS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6 -FGAPEXT=7 -YGAPOP=60 -YGAPEXT=60 -DELEXT=7	-Q=/cgn2_1/USPTO_spool/US09638693/runat_25082003_173340_22273/app_query.fasta_1.327-DB=EST -CPMT-fastap -SUFFX-011.rst -WINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0 -UNITS=bits -START=1 -END=-1 -MATRIX=01190 -TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE=quality -THR_MIN-1 -ALIGN=15 -MODE=LOCAL -OUTFMT-pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000 -USBR-USOR38693_@CCM_1_1_2810_@runat_25082003_177340_22273 -NCPU=6 -ICPU=3 -NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG -EGAPOP=6 -FGAPOP=6 -YGAPEXT=60 -DELEXT=7 -XGAPEXT=60 -DELEXT=7	-UNITS=bits -START=i -END=-1 -MATRIX=oligo -TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE_GRADALLY -THR_MIN=1 - ALIGM=15 -MODE=LOCAL -OUTFWT=pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000 -USER=US09638693_@CGN_1_1_2810_@runat_25082003_173340_22273 -NCPU=6 -ICPU=3 -NO_MAMAP -LARGEDUER -NEG_SCORES-0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WANT ILMEOUT=30 -THRRADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6 -FGAPEXT=7 -YGAPOP=60 -YGAPEXT=60 -DELOF= -DELOFEXT=7	-DOCALIGN=200 -THR_SCORE-quality -THR_MIN=1 -ALIGN=15 -MODE=LOCAL -OUTFMT-pto -NORM-ext -HEASIZE=500 -MINIEN=0 -MAXIEN=2000000000 -USER=USO9638693_eCGM_1_1_2810_erunat_25082003_173340_22273 -NCPU-6 -ICPU-3 -NO_MMAP -LARGEQUERY -NEG_SCORES-0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6 -FGAPEXT=7 -YGAPOP=60 -YGAPEXT=60 -DELEXT=7	-NORM-ext -HEAFSIZE-500 -MINLEN-0 -MAXLEN-2000000000 -NORM-ext -HEAFSIZE-500 -MINLEN-0 -MAXLEN-2003.173340_22273 -NCPU-6 -ICPU-3 -USER-USO9638693_eCGN_1_1_2510_erunat_25082003.173340_22273 -NCPU-6 -ICPU-3 -NO_MWAP -LARGEQUERY -NEG_SCORES-0 -WAIT -DSPBLOCK-100 -LONGLOG -DEV_TIMEOUT-120 -WARN_TIMEOUT-30 -THEADS-1 -XGAPOP-60 -XGAPEXT-60 -FGAPOP-6 -FGAPEXT-7 -YGAPOP-60 -YGAPEXT-60 -DELOP-6 -DELEXT-7	-USSR-USO9638693_eCGN_1_1_2810_erunat_25082003_173340_22273 -NCPU-6 -ICPU-3 -NO_MMAP -LANGEQUERY -NEG_SCORES_0 - WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT-120 -WARN_TIMEOUT-30 -THREAD-1 -XGAPOP-60 -XGAPEXT-60 -FGAPOP-6 -FGAPEXT-7 -YGAPOP-60 -YGAPEXT-60 -DELOP-6 -DELEXT-7	-NO_MMAP -LARGEQUERY -NEG_SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6 -FGAPEXT=7 -YGAPOP=60 -YGAPEXT=60 -DELOP=6 -DELEXT=7	-DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=60 -XGAPEXT=60 -FGAPOP=6 -FGAPEXT=7 -YGAPOP=60 -YGAPEXT=60 -DELOP=6 -DELEXT=7	-FGAPEXT=7 -YGAPOP=60 -YGAPEXT=60 -DELOP=6 -DELEXT=7

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Database : EST:*

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2: em_estbu:*
3: em_estin:*
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5: em_estro:*
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6: em_estro:*
1: em_estro:*
8: em_estro:*
11: gb_est1:*
10: gb_est1:*
11: gb_est2:*
11: gb_est2:*
11: gb_est2:*
11: gb_est2:*
12: em_estro:*
13: gb_est2:*
14: gb_est2:*
15: em_estin:*
16: em_estin:*
17: em_gss_inv:*
18: em_gss_inv:*
19: em_gss_inv:*
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23: em_gss_inv:*
23: em_gss_inv:*
24: em_gss_inv:*
25: em_gss_inv:*
26: em_gss_inv:*
27: em_gss_inv:*
28: gb_gss_in:*
28: gb_gss_in:*
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29: gb_gss2:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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	Description	BE653925 UI-M-AI	75359	17694	01050	553	961	Q	m	3	0	-	ď	8	ᅼ	m	σ	~	AV3879	-	ns60h05.s	0 CH230-7	AV38927	AV38978	AV64046	AV38832	AV38923	AVSBBD/	AV030024 AV030024 AV389975 AV389975	2 BY27582	. um64e0	AV252548	6 NL14_	AV3885	1 BOMHT	AV6271	AV6279	AV631317	2 S	9 1030012	AV6285	AV388479	CIT978S	15205 AV6452	38996 AV3889
SUMMAKIES	ID	BE65392	7535	1769	0105	BQ555344	2779	S	7	8	0	9	2	9	2	8	æ				2								AV63U624 AV389975		-					2712	2790	3131	16411	30973	52857	38847	850	5452	8899
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	Score	6	6	6	6	6	6	6	0	σ	6	0	6	6	6	σ	80	ω	8	80	∞	œ	ω.	œ	æ (ထ (x c	2 000	α	0 00	60	80	80	80	80	æ	æ	8	80	80	8	8	80	&	ω
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ALIGNMENTS

RESULT 1 BE653925/c LOCUS DEFINITION	BE653925 UI-M-AIO-aal-a-12-0-UI.rl NIH_BMAP_MBS Mus musculus cDNA clone
ACCESSION VERSION KEYWORDS	BE653925 BE653925.1 GI:9979838 EST.
SOURCE ORGANISM	Mus musculus (house mouse)
REFERENCE	Eukaryota; Metazoa, Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 399)

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Submission
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PUBMED
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /ugdatism-markar
/wol_type="mrkna"
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/db_xref="texon:10090"
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/lab_host="bH10B (Life Technologies)"
/clone_lib="NIH_BMAP_MBS"
/clone_lib="NIH_BMAP_MBS"
/note="vector: p7730-pac (Pharmacia) with a modified
polylinker; Site_l: Not I; Site_2: Eco RI; The
NIH_BMAP_MBS library is a non-normalized library
constructed from mouse brain stems: The tag is a string
of 5 nucleotides present between the Not I site and the
oligo-dr track. The library was constructed as described
by Bonaldo, Lennon and Soares, Genome Research 6: 791-806
/ 1996. Tissue provided by Ms. Annie Novakovich,
                                                                                                                                                                                                                                            Email: mEST@mail.nih.gov
CDNA Library Preparation: M.B. Soares Lab Clone distribution:
Researchers may obtain BMAP cDNA clones from RESEARCH GENETICS. It
should be noted that Bento Soares is generating a small number of
additional specialized non-redundant arrays of BMAP cDNAs whose
availability will be considered under appropriate and limited
collaborative arrangements The following repetitive elements were
found in this cDNA sequence: 45-106, >(CAG)n#Simple_repeat 262-305,
Seq primer: MI3 Reverse.

Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EST 11-DEC-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus (house mouse)
Mus musculus
Bukaryota, Metazoa: Chordata; Craniata; Vertebrata; Euteleostomi;
Bukamalla; Eutherla: Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 427)
Okazaki,Y., Furuno,M., Kasukawa,T., Adachi,J., Bono,H., Kondo,S.,
Nikaido,I., Osato,N., Saito,R., Suzuki,H., Yamanaka,I., Kiyosawa,H.
Bonaldo,M.F., Lennon,G. and Soares,M.B.
Normalization and subtraction: two approaches to facilitate gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        427 bp mRNA linear EST 11-DEC-:
CDNA clone K430312004 5', mRNA sequence.
                                                                                                                       Contact: Chin, H
National Institute of Mental Health
6001 Executive Blvd. Room 7N-7190, MSC 9643, Bethesda, MD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               66
60
60
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Matches:
Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels:
                                                                Genome Res. 6 (9), 791-806 (1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       104 LeuLeuGlnArgAlaThrGlnGlnGln 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               259 CTCCTGCAGCGAGCTACCCAGCAGCAG 233
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9.00
100.008
100.008
6.778
                                                                                                                                                                                   20892-9643, USA
Tel: 301 443 1706
Fax: 301 443 9890
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                                                                                 97044477
8889548
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COORDILY. Belgerelli.R. Hill.D. P. Mait.C. Hume D.A.

COORDILY. Belgerelli.R. Hill.D. P. Mait.C. Hume D.A.

COORDILY. Selferelli.R. Hill.D. P. Mait.C. Hume D.A.

Guacembala. G. Schrill.E. M. Karadt.D. M. Rasid.W. Chothia.C. Coordil.A.

A. Cousins.S. Dala. B. Dragani.T. A. Ercher.C. C. Forrest

J. E. COURINS. S. Dala. B. Dragani.T. A. Ercher.C. C. Coordil.A.

A. Coordil. A. Caract.D. Guardin. M. Garioldi.W. Gissil.C. Coordil.A.

A. Coordil. C. Trammond. B. Cattering. M. Ercher.C. C. A. Setton

K. M. Karadt. M. Standl.M. Karadi.R. M. Garioldi.W. Garioldi
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CA801050 469 bp mRNA linear EST 05-DEC-2002 sau23h07.yl Gm-c1062 Glycine max cDNA clone SOYBEAN CLONE ID: Gm-c1062-9205 5' similar to TR:Q41102 Q41102 PHASEOLIN G-BOX BINDING PROTEIN PG2;, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Glycine max Euraryota, Viridiplantae, Streptophyta, Embryophyta, Tracheophyta; Euraryota, Viridiplantae, Streptophyta; Euglicotyledons; core eudicots; rosids Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids eurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Shoemaker, R., Kehn, P., Vodkin, L., Erpelding, J., Coryell, V., Khanna, Shoemaker, R., Kehn, P., Vodkin, L., Furbelding, J., Coryell, V., Khanna, A., Bolla, B., Marra, M., Hillier, L., Kucaba, T., Martin, J., Beck, C., Wylie, T., Underwood, K., Steptce, M., Theising, B., Allen, M., Bowers, Y., Person, B., Swaller, T., Gibbons, M., Pape, D., Harvey, N., Schurk, R., Ritter, E., Kohn, S., Shin, T., Jackson, Y., Cardenas, M., McCann, Public Soybean EST Project
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Email: est@watson.wustl.edu
This clone is available through: Resgen, Invitrogen Corp. 2130
South Memorial Parkway Huntsville, AL 35801 For further information
call: (800)-533-4363 or contact: ccu@resgen.com web site:
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obtained from non-normalized and normalized mouse brain spinal cord libraries." 171 c 145\ g 62 t 1\ \text{others}
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  of greenhouse grown plants"
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Public Soybean EST Project
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA
Tel: 314 286 1800
Exx: 314 286 1800
Exa: 314 286 1810
                                                                                                                                                                                                           Conservative:
Mismatches:
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/db_xref="taxon:3847"
/clone="SOYBEAN CLONE ID:
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/dev_stage="1 month old"
/lab_host="DH10B"
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                                                                                                                                                             Length:
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CA801050.1 GI:26058136
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Glycine.
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/mol_type="mRNA"
/strain="c578L/6J"
/db_xref="taxon:10090"
/clone="UI-M-BHI-ano-a-08-0-UI"
/dev_stage="27:32 days"
/lab_host="DHIOB (Life Technologies)"
/clone_lib="NIH_BMAP_M_S2"
/lab_host="DHIOB (Life Technologies)"
/clone_lib="NIH_BMAP_M_S2"
/lab_host="DHIOB (Life Technologies)"
/clone_lib="NIH_BMAP_M_S2"
/lab_nost="DHIOB (Life Technologies)"
/clone_lib="NIH_BMAP_M_S1"
/note="Vector: pT739-pac (Pharmacia) with a modified polylinker; Site_l: Not I; Site_2: Eco RI; The NIH_BMAP_M_S1 which in turn is a subtracted library derived from a mixture of normalized libraries from ten regions of the mouse brain (cerebellum, brain stems, olfactory bulbs, hypothalamus, cortex, amygdala, basal ganglia, pineal gland, striatum, hipoccampus) The driver used for subtraction consisted of a pool of 5,000 clones from the NIH_BMAP_M_S1 library and a pool of 5,000 clones
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA Library Preparation: M.B. Soares Lab Clone distribution:
Researchers may obtain BMAP cDNA clones from RESEARCH GENETICS. It
should be noted that Bento Soares is generating a small number of
additional specialized non-redundant arrays of BMAP cDNAs whose
availability will be considered under appropriate and limited
collaborative arrangements The following repetitive elements were
found in this cDNA sequence: 103-164, >(CAG)n#Simple_repeat 320-363
.>GC_rich#Low_complexity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BE647694 148 bp mRNA linear EST 06-SEP-2000 UI-M-BH1-ano-a-08-0-UI.rl NIH_BMAP_M_S2 Mus musculus cDNA clone UI-M-BH1-ano-a-08-0-UI 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 44). Bonaloo, M.F., Lennon, G. and Soares, M.B.

Normalization and subtraction: two approaches to facilitate gene
Contact: Chin, H
National Institute of Mental Health
6001 Executive Blvd. Room 7N-7190, MSC 9643, Bethesda, MD
                                                                                                                             427
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Mismatches:
Indels:
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                     139 g
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Tel: 301 443 1706
Fax: 301 443 9890
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followed by XhoI digestion. The cDNA fragments were directionally cloned into the EcoRI.XhoI restriction site of the pBluescript vector. The ligated cDNA fragments were transformed into DH10B host cells (GibcoBRL). This library was constructed in the laboratory of Dr. Randy Shoemaker. 142 c 134 g 106 t
                                                                                                                                                                                                                                                                                                                                                                                                                                             552 bp mRNA linear EST 20-JUN-2002 H4033E09-5 NIA Mouse 7.4K cDNA Clone Set Mus musculus cDNA clone H4033E09 5', mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Yong Olan
Laboratory of Genetics
National Institutes of Health
National Institute on Aging/National Institutes of Health
National Institute on Aging/National Institutes of Health
National Institute, Suite 3000, Baltimore, MD 21224-6820, USA
Email: cdna@lgsun.grc.nia.nih.gov
Tibls clone set has been freely distributed to the community. Please
Visit http://lgsun.grc.nia.nih.gov/cDNA/NIA_7-4k.html for details.
Seq primer: -21M13 Reverse
High quality sequence stop: 552
POLYA-NO.
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 552)
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/lab_host="DH10B"
/clone_lib="WIA Mouse 7 4K cDNA Clone Set"
/note="Vector: pSPORT1; Site_1: Sal1; Site_2: Not1; This clone is among a rearrayed set of 7,407 clones from more than 20 cDNA libraries."
206 c 182 g 91 t
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Mismatches:
Indels:
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/db_xref="taxon:10090"
/clone="H4033E09"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cDNA clone set
Genome Res. 12 (12), 1999-2003 (2002)
                                                                                                                                                                          Length:
Matches:
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/organism="Mus musculus"
/mol_type="mRNA"
/strain="C57BL/6"
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Mammalia Eucheria; Kodentia; Sciurognath; Muridae; Murinae; Murinae; Mammalia; Eucheria; Kodentia; Sciurognath; Muridae; Murinae; Mikaido, 1., Osato, N., Sato, R., Suzuki, H., Yamanaka, I., Kiyosawa, H., Yaqi, K., Tomaru, Y., Hasegawa, Y., Nogami, A., Schonbach, C., Yaqi, K., Tomaru, Y., Hasegawa, Y., Nogami, A., Schonbach, C., Gudobori, T., Baldarelli, R., Hill, D. P., Bult, C., Hume, D.A., Godobori, T., Baldarelli, R., Hill, D. P., Bult, C., Hume, D.A., D.A., Schinia, C., Schinia, C., Corbani, L.E., Cousins, S., Dalla, E., Dragani, T.A., Fletcher, C.F., Forrest, A., Frazer, K.S., Gasaterland, T., Gariboldi, M., Glssi, C., Godzik, A., Frazer, K.S., Gasaterland, T., Lee, Y., Lehhard, B., Lyons, Y., Marloi, L., Marchionni, L., McKenzie, L., Warchionni, L., McKenzie, L., Marchionni, L., McKenzie, C., Perrosky, M., Pillai, R., Powan, W.J., Pertea, G., Petrovsky, M., Pillai, R., Pontlus, J.U., Qi, D., Ramachadran, S., Ravasi, T., Reed, J.C., Reed, D.J., Reid, J., Ring, B.Z., Ringwald, M., Sandelin, A., Schneider, C., Semple, C.A., Setou, M., Shimada, K., Sulfana, R., Taylor, M. S., Tasadale, R. D., Marchion, M., Mayered, C., Wushaw-Boris, A., Yangili, Yangili
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY727796 RIKEN full-length enriched, 10 days neonate medulla oblongata Mus musculus cDNA clone B830037L10 5', mRNA sequence. BY727796.1 GI:27140923
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The Institute of Physical and Chemical Research (RIKEN)
1-7-22 Suehiro-ho, Tsurumi-ku, Yokohama, Kanagawa 230-0045, Japan Tel: 81-45-503-9216
Fax: 81-45-503-9216
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Adachi,J., Atzawa,K., Akimura,T., Arakawa,T., Carninci,P., Fukuda
Adachi,J., Atzawa,K., Akimura,T., Arakawa,T., Carninci,P., Fukuda
A.S., Hashizume,W., Hayashida,K., Hirozane,T., Hori,F., Imotani,K.,
Ishii,Y., Itoh,M., Kagawa,I., Kawai,J., Kojima,Y., Kondo,S., Konno
H., Koya,S., Miyazaki,A., Murata,M., Nakamura,K., Nomura,K.,
Numazaki,R., Ohno,M., Ohsato,N., Saito,R., Sakazume,N., Sano,H.,
Sasaki,D., Sato,K., Shibata,K., Shiraki,T., Tagami,M., Takeda,Y.,
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                           Conservative:
Mismatches:
                 Length:
Matches:
                                                                                                                                                                                       Indels:
                                                                                                                                                                                                                                                                                                                                                                                                LeuLeuGlnArgAlaThrGlnGlnGln 112
                                                                                                                                                                                                                                                                                                                                                                                                                                       219 CTCCTGCAGCGAGCTACCCAGCAGCAG 193
                                                                                                                                                                                                                                                                                                             US-09-638-693-36 (1-133) x BQ555344 (1-552)
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                                                                                           100.008
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                                                                                                Percent Similarity:
Best Local Similarity:
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BY727796/c
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/cione="Imade: 6414/33"
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/clone_lip="while_lmap_lero"
/clone_lip="while_lmap_lmap_lero"
/clone_lip="while_lmap_lero"
/clo
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BM951073
                                                                                                                                                                                                                                                            Email: cgapbs remail.nih.gov
Tissue Procurement: Dr. Jim Lin, Gov
Tissue Procurement: Dr. Jim Lin, University of Iowa
CDNA Library preparation: Dr. M. Bento Soares, University of Iowa
CDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa
DNA Sequencing by: Dr. M. Bento Soares, University of Iowa
Clone Distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
This clone was contributed by the Brain Molecular Anatomy Project
                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. I. Chases 1 to 737)
MH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The following repetitive elements were found in this cDNA sequence: 246-307, >(CAG)n#Simple_repeat 463-506, >GC_rich#Low_complexity
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Mismatches:
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/mol_type="mRNA"
/strain="C57BL/6"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                      Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="IMAGE: 6414733"
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   musculus (house mouse)
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Best Local Similarity:
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BM951073/c
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                            ORGANISM
                                                                                                                                                                           TITLE
JOURNAL
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SOURCE
                                                                                                                                   prepare full-length cDNA libraries for rapid discovery of new genes. Genome Res. 10 (10), 1617-1630 (2000)

RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000)

Computer-based methods for the mouse full-length cDNA encyclopedia: real-time sequence clustering for construction of a nonredundant cDNA library. Genome Res. 11 (2), 281-289 (2001) cDNA library was prepared and sequenced in Mouse Genome Bncyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboracory in Riken Genomic Science Laboracory in Riken Division of Experimental Animal Research in Riken contributed to prepare mouse tissues.

Please visit our web site (http://genome.gsc.riken.go.jp) for
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BU707252
BU707252.1 GI:23638537
EST.
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Anote Site_1: Sal1; Site_2: BamHI; cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in RIKEN. Division of Experimental Animal Research in Riken contributed to prepare mouse tissues. 1st strand cDNA was primed with a primer [5]

GAGAGAGAAGGATCCAAGGCTCTTTTTTTTTTTTTTVN 3'], CDNA was
                                                     Computational 'Analysis of Full-Length Mouse cDNAs Compared with Human Genome Sequences Mamm. Genome. 12, 673-677 (2001)

Normalization and subtraction of cap-trapper-selected cDNAs to
, Watahiki, A., Muramatsu, M. and Hayashizaki, Y. Direct
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/dev_stage="10 days neonate"
/lab_host="DH10B"
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Mismatches:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Mus musculus"
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/db_xref="taxon:10090"
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BU707252/c
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US-09-638-693-36 (1-133) x BU707783 (1-758)
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286 c 240 q
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                                                            Mus musculus (house mouse)
   BU707783.1 GI:23639588
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                                                                                                                                                                                                        AUTHORS
TITLE
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/tissue_type="whole brain"
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/clone lip="Winh BMAP_ESO"
/clone lip="Winh BMAP_ESO"
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
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/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located between the Not I site and the polyA tail
/cloned directionally into pXx-Asc vector. The library tag sequence located decompa
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UI-M-FRO-cao-i-15-0-UI.rl NIH_BMAP_FRO Mus musculus cDNA clone
BU707783
                                                                                                                                                                                                                                                         Contact: Robert Strausberg, Ph.D.
Email: cgapbs r@mail.nih.gov

Email: cgapbs remail.nih.gov

Tissue Procurement: Dr. James Lih, Univeristy of Iowa

CDNA Library preparation: Dr. M. Bento Soares, Univeristy of Iowa

CDNA Library Arrayed by: Dr. M. Bento Soares, Univeristy of Iowa

CDNA Eistribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/Link at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This clone was contributed by the Brain Molecular Anatomy Project
                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 743)
                                                                                                                                                                       NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The following repetitive elements were found in this cDNA sequence: 271-332, >(CAG)n#Simple_repeat 488-531, >6C_rich#Low_complexity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7443
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Mismatches:
Indels:
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Matches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Mus musculus"
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/strain="C57BL/6"
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                              Mus musculus (house mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  343
9.00
100.00%
100.00%
6.77%
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                                                                                                                                                                                                                                Unpublished
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Query Match:
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BU707783/c
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ORIGIN
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                                                         ORGANISM
                                                                                                                                           REFERENCE
AUTHORS
TITLE
JOURNAL
COMMENT
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KEYWORDS
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/mol_type="mRNA"
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/clone=11b="NH1=MMAP_EFR0"
/clone=11b="NH1=MMAP_EFR0"
/clone=11b="NH1=MMAP_EFR0"
/clone=1cordanis yeas constructed according
Bonaldo, Lennon and Soares, Genome Research, 6:791-806,
1996. Denatured RNA was size fractionated on a 1% agarose
gel: First strand cDNA synthesis was primed with oligo-dT
primer containing a Not I site. Double strand cDNA was
size selected according to mRNA size fraction, ligated
with EcoR I adaptor, digested with NotI and then cloned
directionally into pYX-Asc vector. The library tag
sequence located between the Not I site and the polyA tail
is AGCGAGAGCA. This library was created for the University
lowa Brain Anatomy Project (BMAP): 'Gene Discovery in the
Developing Mouse Nervous System', supported by National
Institute of Mental Health (NIMH), Hemin Chin, Ph.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       B1968400 799 bp mRNA linear EST 23-OCT-2001 GM830005A12E12 Gm-r1083 Glycine max cDNA clone Gm-r1083-1751 3', mRNA sequence.
                                                                                                                                                                                                                                             Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov

Irsue Procurement: Dr. Jim Lin, University of Iowa
CDNA Library preparation: Dr. M. Bento Soares, University of Iowa
CDNA Library Arrayed by: Dr. M. Bento Soares, University of Iowa
DNA Sequencing by: Dr. M. Bento Soares, University of Iowa
Clone Distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This clone was contributed by the Brain Molecular Anatomy Project (BMAP)
Mus musculus
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 758)
NIH-WC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The following repetitive elements were found in this cDNA sequence: 110-171, >(CAG)n#Simple_repeat 327-370, >GC_rich#Low_complexity Seq primer: pYx-5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       758
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Mismatches:
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Contact: Genoscope
Genoscope
Genoscope
Tentre National de Sequencage
BP 191 91006 EVRY cedex - France
Email: seqref@genoscope.cns.fr
Invitrogen. This sequence belongs to sequence cluster 5578.f For more information about this cluster, see
http://www.genoscope.cns.fr/
cgi.bin/cluster.cgi?seq=CLOBB0262B0BRP1scluster=5578.f. Contact :
Feng Liang Email: filiang@lifetech.com/URL:
Feng Liang Email: filiang@lifetech.com/Invitrogen Corporation 1600
Faraday Avenue Genoscope sequence ID : CLOBB0262B0BRP1.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="NEUROBLASTOMA"
/clone_lib-"Homo sapiens NEUROBLASTOMA"
/clone_lib-"Homo sapiens NEUROBLASTOMA"
/clone_lib-"Homo sapiens NEUROBLASTOMA
/clone_lib-"Homo sapiens NEUROBLASTOMA
with a NotI-oligo(dT) primer. Five prime end enriched,
double-strand cDNA was digested with Not I and cloned into
Library was not normalized."
13 c 211 c 215 g 131 t 39 others
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                                                                                                                                                                                                                                                                                                                                 BX425691 Homo sapiens NEUROBLASTOMA Homo sapiens CDNA clone CLOBB0262E00 5-PRIME, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1 (bases 1 to 889)
Li,W.B. (gruber,C., Jessee,J. and Polayes,D. Full-length cDNA libraries and normalization Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                888
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Mismatches:
  Mismatches:
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                          Indels:
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/organism="Homo sapiens"
                                                                                                                                                               Gaps:
                                                            Gaps:
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                                                                                                              US-09-638-693-36 (1-133) x BI968400 (1-799)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9606"
/clone="CL0BB0262B08"
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/db_xref="taxon:9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens (human)
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Best Local Similarity:
Query Match:
  Best Local Similarity:
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                       Query Match:
DB:
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LOCUS
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ORIGIN
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JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
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1. 799

/organism="Glycine max"
//Mo_Lype="MRNA"
//db_xref="taxon:3847"
//clone="Gm-ri083-1751"
//clone=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This clone is available through: Incyte Genomics, 4633 World Parkway Circle St. Louis, Missouri 63134. Phone (800) 430-0030 or (314) 427-3222 FAX: (314) 427-3324. Web site: http://www.incyte.com/reagents/catalog.jsp?page=clones/collaboratio n/index
                                                                                                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; rosids; eurosids I; Fabales; Fabaceae; Papillonoideae; Phaseoleae;
                                                                                                                                                                                                                                                                       Vodkin, L., Keim, P., Shoemaker, R., Retzel, E., Khanna, A., Coryell, V., Erpelding, J., Raph, C., Shoop, E., Pardinas, J., Liu, L. and Lewin, H. A Functional Genomics Program for Soybean (NSF 9872565) Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lewin, H. A., Director, Keck Center for Comparative and Functional Genomics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               University of Illinois
Edwin R. Madigan Building, 1201 W. Gregory, Urbana, IL 61801, USA
Tel: (217) 244-6147
Fax: (217) 333-4582
                                                                                                                                                                                                                                                                                                                                                                         Other_ESTs: AW132308 corresponding to Gm-c1013-2340 (5')
Contact: Vodkin, L.O., PI, A Functional Genomics Program for
Soybean (NSF 9872565)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Seq primer: 5'-TTTTTTTTTTTTTTTTTT(A/C/G)-3'
Location/Qualifiers
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Matches:
Conservative:
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BI968400
BI968400.1 GI:16342805
                                                                                 Glycine max (soybean)
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9.00
100.00%
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                                                                                                                max
                                                                                                                                                                                                                      Glycine.
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                                                                                                           Glycine
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is a_NIH_MGC_Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BQ900568 1016 bp mRNA linear EST 16-AUG-2002
AGENCOURT_8767827 NIH_MGC_129 Mus musculus cDNA clone IMAGE:6314266
                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. I tosaes 1 to 904)
NIH-WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                         Context: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
   Tissue Procurement: Susan L. Sullivan, PhD.
   CDNA Library Preparation: ResGen, Invitrogen Corp
   CDNA Library Arrayed by: The I.M.A.G.E. Consortium
   DNA Sequencing by: Agencourt Bioscience Corporation
   Clone distribution: MGC clone distribution information can be
   found through the I.M.A.G.E. Consortium/LLNL at:
   Plate: Libralin.gov column: 18
   High quality sequence start: 17
   High quality sequence stop: 587.
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MIH-MGC Http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpublished
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Tissue Procurement: Susan L. Sullivan, PhD.
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                                                     Mus musculus (house mouse)
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Mus musculus
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LOCUS

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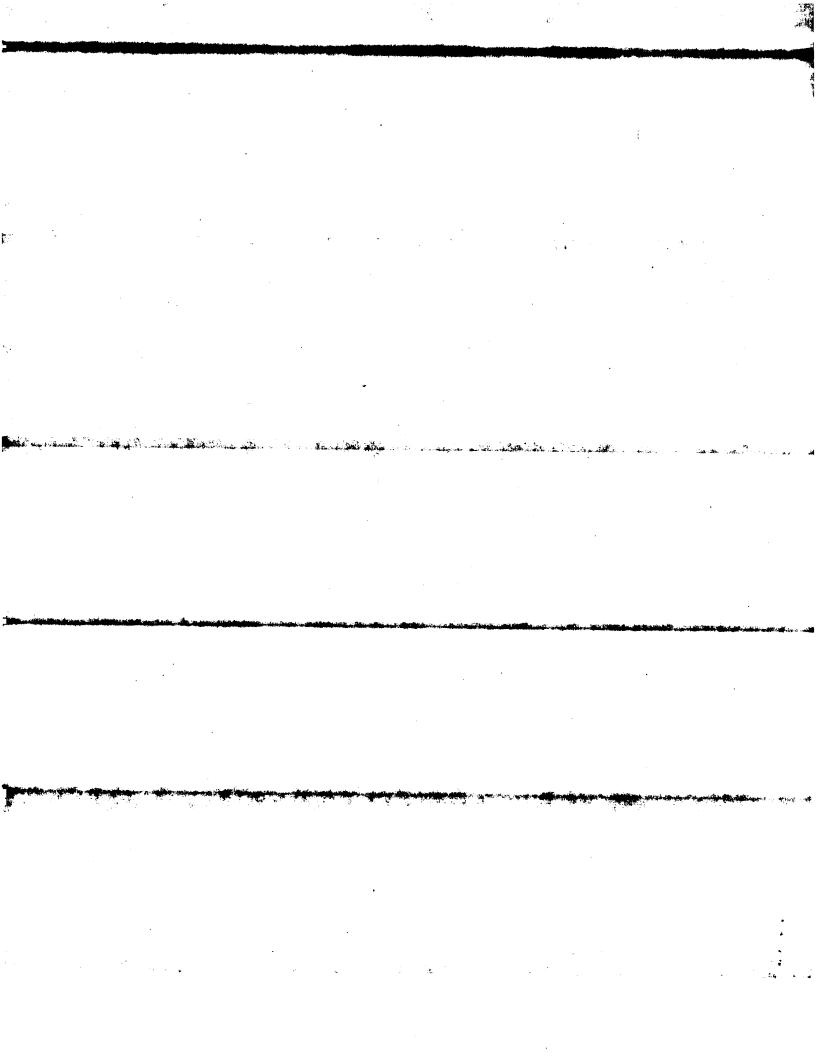
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undirectionally. Primer: Oligo dT. Average insert size
2.2 kb. Constructed by Resden, Invitrogen Corp. Note: this
is a NIH_MGC_Library."
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AL33581.
AL33581.
AL33581.
GSS genome survey sequence.
Tetraodon nigroviridis
Tetraodon nigroviridis
Actinopterygii; Neopterygii; Teleostei; Buteleostei;
Actinopterygii; Acanthopterygii; Percomorpha; Tetraodontiformes;
Tetradontoidea; Tetraodontidae; Tetraodont.
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Estimate of human gene number provided by genome-wide analysis using Tetraodon nigroviridis DNA sequence
Nat. Genet. 25 (2), 235-238 (2000)
                                                                         þe
cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Agencourt Bioscience Corporation
Clone distribution: MGC clone distribution information can l
found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
Plate: LLAM13742 row. 1 column: 11
High quality sequence stop: 562.
Location/Qualifiers
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Mismatches:
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Search completed: August 29, 2003, 14:23:20 Job time : 1829 secs
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Submitted (12-APR-2000) Genoscope - Centre National de Sequencage : BP 191 91006 EVRY cedex - FRANCE (E-mail : segref@genoscope.cns.fr Theb: www.genoscope.cns.fr)
This sequence is a single read and was generated as part of a large scale clone-end sequencing project of the Tetraodon nigroviridis genome. For more information, please take a look at http://www.genoscope.cns.fr/Tetraodon.

Location/Oualifiers
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HHMI and Department of Developmental Biology
Stanford University School of Medicine
Beckman Center B300, 279 Campus Drive, Stanford, CA 94305-5329, USA
Tal: 650 725 5954
Fax: 650 725 7739
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Gasterosteus aculeatus
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Neoteleostei;
Acanthomorpha, Acanthopterygii; Percomorpha, Gasterosteidoe, Gasterosteus.

1 (bases 1 to 1142)
Kingsley,D.M., Peichel,C., Balabahdra,S., Grimwood,J., Dickson,M., Schmutz,J. and Myers,R.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /sex="mixed male and female"
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Mismatches:
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Plate: 22
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Location/Qualifiers
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by Stratagene. First strand cDNA synthesis was primed with a 50 blinker primer containing an oligo dT sequence preceded by a synthetic Xhoi site. 5 prime adaptors were preceded by a synthetic Xhoi site. 5 prime adaptors were used containing an ECORI cohesive end. The finished cDNAs were inserted in to the ZAP express vector. The finished cDNAs unidirectionally in the sense orientation with respect to the lac2 promoter of pBK-CMY. An amplified library was prepared from approximately 3 million primary clones in the lambda ZAP Express vector. In vivo excision was then used to generate individual pBK-CMY phagemid clones for
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August 29, 2003, 08:16:39; Search time 49 Seconds (without alignments) 430.829 Million cell updates/sec
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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                          1107863 seqs, 158726573 residues
                                                                            OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                            Title:
Perfect score:
                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                          Searched:
                                                                                                                                                                                                                                                     Sequence:
                                                                                                                        Run on:
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Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database :

1. (SIDSI)gcgdata/geneseq/geneseqp-embl/AA1980.DAT:*
2. (SIDSI)gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
3. (SIDSI)gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
4. (SIDSI)gcgdata/geneseq/geneseqp-embl/AA1981.DAT:*
5. (SIDSI)gcgdata/geneseqfy-embl/AA1981.DAT:*
5. (SIDSI)gcgdata/geneseqfy-embl/AA1981.DAT:*
6. (SIDSI)gcgdata/geneseqfy-embl/AA1981.DAT:*
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8. (SIDSI)gcgdata/geneseqfy-embl/AA1981.DAT:*
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9. (SIDSI)gcgdata/geneseqfy-emeseqfy-embl/AA1999.DAT:*
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9. (SIDSI)gcgdata/geneseqfy-emeseqfy-embl/AA1999.DAT:* /SIDS1/gcgdata/geneseq/geneseqp.embl/AA2001.DAT.* /SIDS1/gcgdata/geneseq/geneseqp.embl/AA2002.DAT:* /SIDS1/gcgdata/geneseq/geneseqp.embl/AA2003.DAT:* A_Geneseq_19Jun03:* 1: /srr?

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		æ			SUMMARIES	
Result No.	Score	Query Match	Query Match Length DB	DB	ID	Description
П	669	100.0	133	15		Polypeptide encode
7	691	98.9		15	AAR63289	Polypeptide encode
٣	691	98.9		15	AAR63290	Polypeptide encode
4	691	98.9		15	AAR63390	HCV polypeptide se
2	672	96.1		15	AAR63286	Polypeptide encode
9	672	96.1		15	AAR63287	Polypeptide encode
7	652	93.3	128	14	AAR37937	HCV NS4 region con
80	648	92.7		14	AAR37932	HCV NS4 region fro
σ	645	92.3		14	AAR37933	HCV NS4 region fro

HCV NS4 region fro	Hepatitis C virus	HCV NS4 region fro	HCV NS4 region fro	Hepatitis C virus	Amino acid sequenc	Hepatitis C virus	Peptide encoded by	Open reading frame	HCV antigen C100.	C terminus of supe	Sequence of the ca	Protein sequence o	Polypeptide encode	CKS-HCV antigen fu	HCV recombinant an	CKS-HCV antigen fu	HCV recombinant an	HCV CKS-C100D1 - p	HCV C100D1 recombi	HCV-C100D1 recombi	-		HCV CKS-C100D2 - p	HCV C100D2 recombi	HCV-C100D2 recombi	HCV C100D2 recombi		CKS-HCV antigen fu	recombina	ORF extending thro	Sequence encoded i		CKS-HCV antigen fu		CKS-HCV antigen fu	
AAR37936	AAR94462	AAR37934	AAR37935	AAW77397	ABP71460	AAU99289	AAP90138	AAR23999	AAR90933	AAP90182	AAP92048	AAP90141	AAP92024	AAR33565	AAB69023	AAR33566	AAB69024	AAR21571	AAR33638	AAR33580	AAR33600	AAB51378	AAR21572	AAR33639	AAR33581	AAR33601	AAB51379	AAR33567	AAB69025	-	AAP92029	AAB69027	AAR33570		AAR33571	
14	17	14	14	19	24	23	10	13	17	10	10	10	10	14	22	14	22	13	14	14	14	22	13	14	14	14	22	14	22	10.	10	22	14	22	14	
127	3023	117	117	3011	3011	3012	237	363	363	382	382	460	460	592	592	594	594	282	597	297	597	297	599	599	599	599	599	613	613	828	859	971	973	973	992	
92.3	9.98	4	3	77.1	7	~	Θ	9	9	76.4	9	9	9	76.4	76.4	76.4	76.4	76.4	9	76.4	76.4	9	9	76.4	76.4	76.4	9	9	76.4	9	76.4	9	9	76.4	76.4	
645	605	590	583	539	539	539	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	534	
10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	

ALIGNMENTS

RESULT 1 AAR63288 standard; Protein; 133 AA. XX AC AAR63288; XX DT 25-MAR-2003 (updated) DT 01-AUG-1995 (first entry). XX XX XX E Polypeptide encoded by hepatitis C virus NS3/NS4 sequence. XX XX KW Hepatitis C virus; HCV; primer; probe; detection; diagnosis; KW classification; immunisation; prophylaxis; serotyping.
da; da; rrs; lm; lm;

WO9425601-A2

10-NOV-1994.

94WO-EP01323. 93EP-0401099. 27-APR-1994; 27-APR-1993; 05-AUG-1993;

(INNO-) INNOGENETICS NV SA. Maertens G, Stuyver L; WPI; 1994-358277/44. N-PSDB; AAQ78040.

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Stuyver L;
  N-PSDB; AAQ78041.
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05-AUG-1993;
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01-AUG-1995
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                                                                                                                                                                                                                                                                                                                                                              Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (1) the region spanning positions 417-957 of the Core/El region of HCV subrype 3: (11) the region spanning positions 4892-592 of the NS3 region of HCV type 3; (11) the region spanning positions 4892-592 of the NS3/4 region of HCV type 3; (11) the region spanning positions 802-823 of the NS3/4 region of HCV type 3; (11) the subrype as subgroup of HCV subtype 3a; or (V) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an
                                                                                                                                                             sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the NS3/NS4 region of HCV subtype 3a and is taken from a clone designated BR36-20-164.
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New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
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                                                                                                                                                                                                                                                                                                   Length 133;
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classification; immunisation; prophylaxis; serotyping.
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                                                                                                                                                                                                                                                                                                   100.0%; Score 699; DB 15;
100.0%; Pred. No. 1.4e-73;
ive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR63289 standard; Protein; 133 AA.
                                            Claim 11; Page 125; 404pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93EP-0402019.
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(first entry)
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                                                                                                                                                                                                                                                                                                                Local Similarity
                                                                                                                                                                                                                                                                               133 AA;
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Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (1) the region spanning positions 417-957 of the particularly (1) the region spanning positions 664-4730 of the NS3 region of HCV subtype 3s; (1i) the region spanning positions 8023-8235 of the NS5 region of the BR36 captions 4892-5292 of the NS34 region of HCV type 3; (1ii) the region spanning positions 8023-8235 of the NS5 region of the BR36 subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV radion of HCV subtypes 3a and for serotyphing. This sequence corresponds to the NS3NS4
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    and related

New polynucleotide sequences from hepatitis C virus - and relate vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
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0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     region of HCV subtype 3a and is taken from a clone designated
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                                                                                                                                               Claim 11; Page 127; 404pp; English.
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Matches 132; Conservative
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(INNO-) INNOGENETICS NV SA
                                              N-PSDB; AAQ78125
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01-AUG-1995
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                                                                                                                                                                                                                                                                                                                                                                                                       1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
                                             New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                                                                                                                                                                                                                             and for serotyping. This sequence corresponds to the NS3/NS4 region of HCV subtype 3a and is taken from a clone designated BR36-20-165.
                                                                                                                                                                                                                                                                                                                                             98.9%; Score 691; DB 15; Length 133; llarity 99.2%; Pred. No. 1.2e-72; Conservative 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hepatitis C virus; HCV; primer; probe; detection; diagnosis;
classification; immunisation; prophylaxis; serotyping.
                                                                                                                                                                                                                                                                                                  'Updated on 25-MAR-2003 to correct PN field.)
                                                                                         Claim 11; Page 128-129; 404pp; English
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93EP-0402019.
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(first entry)
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           WPI; 1994-358277/44.
                                                                                                                                                                                                                                                                                                                                                          Local Similarity
es 132; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hepatitis C virus.
                      N-PSDB; AAQ78042
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18-AUG-1995
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61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                                                                                                                                                                                                                                                                                                                                                                                                        Compositions comprising at least 5, and pref. 8 or more contiguous nuclectides selected from an HCV type 3 genomic sequence, more particularly (i) the region spanning positions 417-957 of the Core/El region of HCV subtype 33; (ii) the region spanning positions 4664-4730 of the NS3 region of HCV type 3; (iii) the region spanning positions 802-5292 of the NS3/4 region of HCV type 3; (iv) the region spanning positions 802-8035 of the NS3/4 region of HCV type 3; (iv) the subgroup of HCV subtype 3s; of the NS3 subgroup of HCV subtype 3s; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an interpretations.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by
                                                                                                                                                                                       New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the nucleotides in such compositions may be used for immunisation against HCV for the detection of antibodies directed against HCV and for serotyping. (Updated on 25-MAR-2003 to correct PN field.)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98.9%; Score 691; DB 15; Length 209; 99.2%; Pred. No. 2.2e-72;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hepatitis C virus; HCV; primer; probe; detection; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Polypeptide encoded by hepatitis C virus NS3/NS4 sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       classification; immunisation; prophylaxis; serotyping
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 274-275; 404pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR63286 standard; Protein; 133 AA.
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93EP-0402019.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TNWQKLEAFWHKH 133
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(first entry)
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Maertens G, Stuyver L;
                                                                     WPI; 1994-358277/44.
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(INNO-) INNOGENETICS NV SA.
                                  Maertens G, Stuyver
                                                       WPI; 1994-358277/44
                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                             Sequence 133 AA;
                                                                   N-PSDB; AAQ78039
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23-SEP-1993
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (1) the region spanning positions 417-957 of the Core/El region of HCV subtype 3a; (1i) the region spanning positions 4664-4730 of the NS3 region of HCV type 3; (1ii) the region spanning positions 802-5292 of the NS3/4 region of HCV type 3; (1v) the region spanning positions 8023-8035 of the NS5 region of the BR36 subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an
                                                                                                                                                                                                                                 isolate belonging to a specific genotype, or as a probe for specific detection/Classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the NS3/NS4
                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                            vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                             and for serotyping. This sequence corresponds to the NS3/NS4 region of HCV subtype 3a and is taken from a clone designated
                                                                                                                                                                                                                                                                                                                                                            DB 15; Length 133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hepatitis C virus; HCV; primer; probe; detection; diagnosis; classification; immunisation; prophylaxis; serotyping.
                                                                 sequences from hepatitis C virus - and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Polypeptide encoded by hepatitis C virus NS3/NS4 sequence.
                                                                                                                                                                                                                                                                                                                                                         Score 672; DB 15; Length 1:
Pred. No. 2e-70;
6; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                              (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                             Claim 11; Page 121-122; 404pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR63287 standard; Protein; 133 AA.
                                                                                                                                                                                                                                                                                                                                                           96.1%;
93.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (updated)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                              124; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hepatitis C virus type 3.
           Stuyver L;
                               WPI; 1994-358277/44.
                                                                 New polynucleotide
                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                     133 AA;
                                         N-PSDB; AAQ78038
          Maertens G,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               409425601-A2
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05-AUG-1993;
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01-AUG-1995
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                                                                                                                                                                                                                                                                                                                                     Sequence
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Best Local S
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61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
                                                                                                                                                                                                New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3.
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Pred. No. 2e-70;
6; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                           Claim 11; Page 123-124; 404pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96.1%;
93.2%;
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(first entry)
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(COMM-) COMMON SERVICES AGENCY.
  24-JUN-1992; 92GB-0013362.
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                                           Simmonds P,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1993-182554/22.
N-PSDB; AAQ43106.
                                                                                                                                                                                                                                                                                                                128 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hepatitis C virus.
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23-SEP-1993
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                                                                                                                                                                                                                                                                                                                  Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                              127
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                      Query Match
                                           Chan S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 9
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Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAA43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 1 sequences.
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                                                                                                                                                                                                                                                                                                                                                                                    0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3.
                                                                                                      DNA encoding antigenic peptide(s) of new types of hepatitis (virus – for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                             Query Match 93.3%; Score 652; DB 14; Length 128; Best Local Similarity 97.6%; Pred. No. 4.2e-68; Matches 124; Conservative 1; Mismatches 2; Indels
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                                                                                                                                              Disclosure; Fig 9b; 120pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR37932 standard; Protein; 128 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HCV NS4 region from donor T0040.
                               (COMM-) COMMON SERVICES AGENCY
91GB-0024696.
92GB-0013362.
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23-SEP-1993 (first en
                                                   Chan S, Simmonds P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      127 EAFWHKH 133
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                                                                       WPI; 1993-182554/22
                                                                                                                                                                                                                                                                                                                         128 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hepatitis C virus.
                                                                                  N-PSDB; AAQ43111
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 21-NOV-1991;
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          24-JUN-1992;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The sequences given in AAR37932-37 show amino acids 1638-1765 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS5 (see AAR37923-26) and core region between type 1 sequences.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 THPVTKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPD 60
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DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92.7%; Score 648; DB 14; Length 128; 96.9%; Pred. No. 1.2e-67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR37933 standard; Protein; 127 AA.
                                                                                                                                                              Disclosure; Fig 9b; 120pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HCV NS4 region from donor T0038.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92WO-GB02143
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(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 96.9
Matches 123; Conservative
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us-09-638-693-36.rag

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The sequences given in AAR37932-37 show amino acids 1638-1765 of the NS4 region of hepatitis C virus-3 (HVV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ4058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS5 (see AAR37923-26) and core region between type 1 sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 HPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1505..1520
/note= "this part of the sequence is missing from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "this part of the sequence is missing from the specification"
                                                                                                                                           DNA encoding antigenic peptide(s) of new types of hepatitis (
virus - for diagnosing and treating HCV infection, screening
blood.samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            92.3%; Score 645; DB 14; Length 127; .96.8%; Pred. No. 2.7e-67; tive 2; Mismatches 2; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hepatitis C virus; antibody; detection; diagnosis; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the specification" 2433..2448
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAR94462 standard; Protein; 3023 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                         Disclosure; Fig 9b; 120pp; English
(COMM-) COMMON SERVICES AGENCY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hepatitis C virus polypeptide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20-SEP-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity .96.8 Matches 122; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /note=
                                        Simmonds P,
                                                                                WPI; 1993-182554/22.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128 AFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ||||||
|121 AFWHKH 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 127 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hepatitis C virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         classify; subtype.
                                                                                                     N-PSDB; AAQ43110.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JP08056672-A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
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                                        Chan S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Key
Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 11
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The sequences given in AAR37932-37 show amino acids 1638-1765 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           68 EVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVTTNWQKLE 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8 HPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPDK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; dlfferentiation; NS-3; core region; type 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                          DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 645; DB 14;
Pred. No. 2.7e-67;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            region between type 3 and type 1 sequences. (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2; Mismatches
                                                                                                                                                                                                                                          Disclosure; Fig 9b; 120pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR37936 standard; Protein; 127 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HCV NS4 region from donor T1787.
                (COMM-) COMMON SERVICES AGENCY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               92.3%;
96.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91GB-0024696.
92GB-0013362.
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(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         122; Conservative
                                                        Simmonds P,
                                                                                              WPI; 1993-182554/22
N-PSDB; AAQ43107.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ||||||
| 121 AFWHKH 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         128 AFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         127 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 depatitis C virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9310239-A2.
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23-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :0-NOV-1992;
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24-JUN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               27-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
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                                                        Chan S,
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Matches

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RESULT 10 **AAR37936**

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Gaps

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117 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 21-NOV-1991;
24-JUN-1992;
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23-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 27-MAY-1993.
                                                                                                                                                                                         Seguence
                                                                                                                                                                                                                                                                                                                                                         AAR37935;
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                                                                                                                                                                                                                                                                                                                     RESULT 13
AAR37935
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                                                                                                                                                                                                                                                            PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
                                                                                                                                  The present sequence is a polypeptide comprising a 3023 amino acid sequence which is encoded by a cDNA (AAT13279) to a hepatitis C virus (HCV) genomic RNA. The protein can be easily detected by antibodies in an assay for the detection of HCV. The DNA and the protein are useful for classifying the subtype of HCV. At least a part of the protein may be used as a vaccine against HCV.
                                                                                                                                                                                                                                                  1 ONEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
                                                                                                                                                                                                                                   Gaps
                                                                                 Hepatitis C virus genomic RNA, DNA and related proteins - useful for detection, diagnosis and identification of hepatitis C virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3.
                                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                86.6%; Score 605; DB 17; Length 3023;
84.2%; Pred. No. 9.1e-61;
Live 11; Mismatches 10; Indels 0
                                                                                                                  Claim 4; Page 16-23; 25pp; Japanese
                                                                                                                                                                                                                                                                                                                                                                                 AAR37934 standard; Protein; 117 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                             HCV NS4 region from donor T0036.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (COMM-) COMMON SERVICES AGENCY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Yap PL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92GB-0013362.
      94JP-0223933.
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SQWQKAEAFWQQH 1772
                                                                                                                                                                                                                                                                                                                      TNWOKLEAFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                                    (updated)
(first entry)
                                                                                                                                                                                                                         Local Similarity 84.2%
nes 112; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Simmonds P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1993-182554/22.
N-PSDB; AAQ43108.
                                                        WPI; 1996-182301/19
                                                                                                                                                                                                3023 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hepatitis C virus.
                                       (SAYA/) SAYAMA K.
                                                                 N-PSDB; AAT13279
      26-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9310239-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-NOV-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            21-NOV-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    24-JUN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                   25-MAR-2003
23-SEP-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-MAY-1993
                                                                                                                                                                                                                                                                                                                                                                                                  AAR37934;
                                                                                                                                                                                                                                                                                     61
                                                                                                                                                                                                Seguence
                                                                                                  sub-type
                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chan S,
                                                                                                                                                                                                                                  Matches
                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
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The sequences given in AAR37932-37 show amino acids 1638-1765 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ4058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS5 (see AAR37923-26) and core (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8 HPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPDK 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   68 EVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVTTNWQ 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Non-coding region; hepatitis C virus; blood donor; type 2; type 1 HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 117;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 590; DB 14;
Pred. No. 6.6e-61;
1; Mismatches 2;
                                                                                                                                          Disclosure; Fig 9b; 120pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR37935 standard; Protein; 117 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HCV NS4 region from donor T0026.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (COMM-) COMMON SERVICES AGENCY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84.48;
97.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          92WO-GB02143.
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(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches 114; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1993-182554/22.
N-PSDB; AAQ43109.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
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3011 AA;

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to the determination of functional HCV genomic RNA sequences, to construction of infectious HCV DNA clones, and to the use of the clones, or their derivatives, in therapeutic, vaccine and diagnostic applications. The invention is also directed to HCV vectors, e.g. for gene therapy or gene vaccines. The products and methods can also be used for identifying cell lines or animals that are permissive for infection with HCV, for studying HCV infection, isolating functional components of HCV, and for screening for agents capable of modulating HCV replication in vitro and in vivo.
                                                                                                                                                                                 Sequence
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                           The sequences given in AAR37932-37 show amino acids 1638-1765 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ4308-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type 0 f virus. Comparison of the N33 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same cegion between type 3 and type 1 sequences. (see AAR37923-26) and core region between type 3 and type 1 sequences.
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                                                                                                                                                                                                                                                                                                                                                                                                                              8 HPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPDK 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EVLYQQYDEMEECSQAAPYIEQAQVIAHQFKCKVLGLLQRATQQQAVIEPIVTTNWQ 124
                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New hepatitis C virus nucleic acid clones - comprising a 5'-terminal conserved sequence, an open reading frame encoding functional components and a 3'-terminal conserved sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This is the amino acid sequence of the polyprotein encoded by hepatitis C virus (HCV) isolate H77 (see AAV59361). Its cleavage products form functional components of HCV virus particles and RNA replication machinery. A genetically engineered HCV nucleic acid clone is claimed that comprises at a least a functional portion of the HCV H77 nucleic acid sequence. The invention relat
                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                       Score 583; DB 14; Length 117;
Pred. No. 4.3e-60;
2; Mismatches 3; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HCV; therapy; diagnosis; vector; gene therapy; vaccine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ä
Disclosure; Fig 9b; 120pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hepatitis C virus H77 polyprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW77397 standard; Protein; 3011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Disclosure; Page 104-115; 209pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hepatitis C virus isolate H77
                                                                                                                                                                                                                                                                                                                                       83.4%;
95.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98WO-US04428.
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                                                                                                                                                                                                                                                                                                                                                        al Similarity 95.7
112; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UNIW ) UNIV WASHINGTON.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1998-520770/44.
                                                                                                                                                                                                                                                                                                    117 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-JAN-1999
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Matches
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1691
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Treating hepatitis, cirrhosis or hepatocellular carcinoma by inhibiting binding between HCV envelope glycoproteins and DC-SIGN/DC-SIGNR proteins on the surface of cells -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The invention relates to methods and agents for diagnosing and treating
                                                                                       1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          HCV; hepatic disorder; envelope glycoprotein; DC-SIGN; DC-SIGNR;
hepatoprotective; virucide; cytostatic; protein therapy; polyprotein.
                                      Gaps
                                    ö
   Length 3011;
                                    Indels
77.1%; Score 539; DB 19;
75.9%; Pred. No. 4.7e-53;
ive 10; Mismatches 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Amino acid sequence of HCV polyperotein.
                                                                                                                                                                                                                                                                                                                                   ABP71460 standard; Protein; 3011 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 100; Fig 3; 165pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   26-JUN-2001; 2001US-0891894.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-JUN-2002; 2002WO-US20875.
                                                                                                                                                                                                                                              1752 TNWOKLEVFWAKH 1764
                                                                                                                                                                                                               TNWOKLEAFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                     15-MAY-2003 (first entry)
                  Best_Local Similarity 75.9%
Matches 101; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hepatitis C virus
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 Query Match
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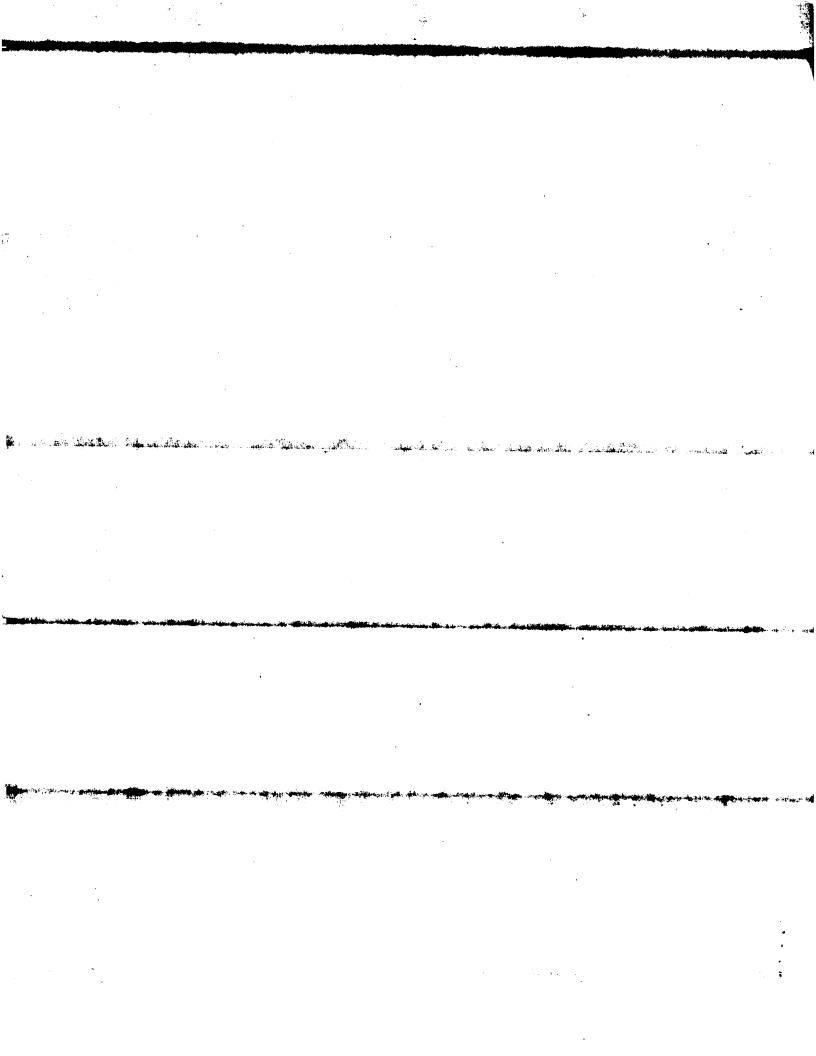
The invention relates

3011 AA;

Sequence

SQ

Search completed: August 29, 2003, 11:17:55 Job time : 51 secs



23, Appl 3, Appli 3, Appli 3, Appli 124, App 3, Appli

App Appl Appl Appl 138,

sednence sed

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CURRENT APPLICATION DATA:

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/244,116B
FILING DATE: 15-010-1994
CLASSIFICATION: 435
PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/GB92/02143
FILING DATE: 20-00-1992
ATTORNEY/AGENT INFORMATION:
NAME: Sibley, Kenneth D.
                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 1211 East Morehead Street
STREET: 1211 East Morehead Street
CITY: Charlotte
STATE: No. 5763159th Carolina
219: 28234
US-08-466-975A-23
US-08-391-671A-23
US-09-275-265-23
US-09-941-611-23
US-08-442-260-3
US-08-442-260-3
US-08-442-805A-3
US-08-444-818-124
US-08-444-818-124
US-08-440-103-36
US-08-440-103-36
US-08-440-519-10
US-08-440-519-10
US-08-440-519-10
US-08-440-519-10
US-08-440-519-10
US-08-833-678A-6
                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Simmonds, Peter
APPLICANT: Chan, Shiu-Wan
APPLICANT: Yap, Peng L.
TITLE OF INVENTION: Hepatitis-C Virus Testing
NUMBER OF SEQUENCES: 53
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB
                                                                                                                                                                                                                                                       ALIGNMENTS
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                                                                                                                                                                                                                                                                                                                 Sequence 17, Application US/08244116B Patent No. 5763159 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Sibley, Kenneth D.
REGISTRATION NUMBER: 31,665
REPERRNCE/POCKET NUMBER: 1749
TELECOMMUNICATION INFORMATION:
TELEPHONE: 704-337-1561
TELEFAX: 704-334-2014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Hepatitis-C virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO: 17:
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amino acid
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MOLECULE TYPE: peptide
HYPOTHETICAL: yes
FRAGMENT TYPE: internal
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  ORIGINAL SOURCE:
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Appl
                                                                                  August 29, 2003, 11:03:10 ; Search time 21 Seconds (without alignments) 267.969 Million cell updates/sec
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                                                                                                                                                 699
1 QNEICLTHPITKYIMACMSA.....VIEPIVTTNWQKLEAFWHKH 133
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/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
             GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd
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US-08-867-611-16
PCT-US92-0695A-21
US-08-867-611-18
PCT-US92-06965A-23
US-08-867-611-49
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-444-818-68
US-08-444-818-20
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US-09-201-912-45
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Maximum Match 100%
Listing first 45 summaries
                                                              OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Match Length DB
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Sequence:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
                                                  8 HPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPDK 67
                                                                    1 ONEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
                     0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 3012;
                                                                                                                                                                                                                                                                                       APPLICANT: Rice, Charles et al.

TITLE OF INVENTION: FUNCTIONAL DNA CLONE FOR HEPATITIS C
TITLE OF INVENTION: VIRUS (HCV) AND USES THEREOF
NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
ADDRESSEE: David A. Jackson, Esq.
STREET: 411 Hackensack Ave, Continental Plaza, 4th
STREET: Floor
CITY: Hackensack
STATE: New Jersey
                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
Best Local Similarity 94.9%; Pred. No. 2.9e-59;
Matches 111; Conservative 0; Mismatches 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        77.1%; Score 539; DB 3; I
75.9%; Pred. No. 1.5e-53;
Live 10; Mismatches 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1113-1-006
TELECOMMUNICATION INFORMATION:
TELEPHONE: 201-487-5800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/811,566
FILING DATE: 03-MAR-1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                        Sequence 2, Application US/08811566
Patent No. 6127116
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Floppy disk
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TELEPHONE: 201-343-1684
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Best Local Similarity
Matches 101; Conserva
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY:
                                                                                                                                                                                                                          US-08-811-566-2
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                                                                                                                                                                                                          RESULT 2
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APPLICANT: Brechot, Christian
APPLICANT: Kremsdorf, Dina
APPLICANT: Kremsdorf, Dina
APPLICANT: Porchon, Colette
TITLE OF INVENTION: Nucleotide and Peptide Sequences of a
TITLE OF INVENTION: Hepatitis C Virus Isolate, Diagnostic and Therapeutic
NUMBER OF SEQUENCES: 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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3-09-034-756-2
Sequence 2, Application US/09034756
Patent No. 6392028
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: FUNCTIONAL DNA CLONE FOR HEPATITIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 3012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/034,756
FILING DATE: 04-May-1998
CLASSIFICATION: CURNOWN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 77.1%; Score 539; DB 4; I Best Local Similarity 75.9%; Pred. No. 1.5e-53; Matches 101; Conservative 10; Mismatches 22;
                                                                                                                                                                  NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL & HAFERKAMP, 1.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 6029-4831
TELECOMMUNICATION INFORMATION:
TELEPHONE: 314-727-5188
TELEFAX: 314-727-6092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYPOTHETICAL: NO FRAGMENT TYPE: N-terminal SEQUENCE DESCRIPTION: SEQ ID NO: 2: US-09-034-756-2
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Patent No. 5866139
GENERAL INFORMATION:
APPLICANT: Brechot, Christian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 3012 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                               COUNTRY: USA ZIP: 63105 COMPUTER READABLE FORM:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 TNWQKLEAFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acid
                                                                                                                                                                                                                                                               CITY: ST. LOUIS
STATE: MO
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us-09-638-693-36.rai

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APPLICATION NUMBER: US/08/487,231
FILING DATE: 07-JUNE-1995
                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 06 882
FILING DATE: 06-JUN-1991
ATTORNEY/AGENT INFORMATION:
                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 45, Application US/08487231 Patent No. 5919454
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REFERENCE/DOCKET NUMBER: 05
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TELEPHONE: 202-408-4000
TELEFAX: 202-408-4400
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: 45:
SEQUENCE CHARACTERISTICS:
LENGTH: 313 amino acids
TYPE: amino acid
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                                                                                                                                                                                                                                                    FILING DATE: 18-MAR-1993
CLASSIFICATION: 435
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Meyers, Kenneth J
REGISTRATION NUMBER: 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TOPOLOGY: linear; MOLECULE TYPE: peptide US-07-965-285-45
   ZIP: 20005-3315
COMPUTER READABLE FORM:
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dunner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
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APPLICANT: Kremsdorf, Dina
APPLICANT: Kremsdorf, Dina
APPLICANT: Porchon, Collette
TITLE OF INVENTION: Nucleotide and Peptide Sequences of a
TITLE OF INVENTION: Hepatitis C Virus Isolate, Diagnostic and Therapeutic
MINDER OF SECURATION: Applications
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 237
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llarity 74.4%; Pred. No. 2.7e-54;
Conservative 12; Mismatches 22; Indels
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                           ADDRESSEE: Finnegan, Henderson, Farabow, Garrett
ADDRESSEE: Dunner
STREET: 1300 I Street, N.W.
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25,146
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APPLICATION NUMBER: US/07/965,285
FILING DATE: 18-MAR-1993
APPLICATION NUMBER: FR 91 06 882
FILING DATE: 06-UUN-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                      MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-408-4000
TELEFAX: 202-408-4400
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Meyers, Kenneth J. REGISTRATION NUMBER: 25, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : 313 amino acids
amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: peptide
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
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CORRESPONDENCE ADDRESS:
                                                                                                                             CITAL
STATE: DC
COUNTRY: USA
--- 20005-3315
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tes 99; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY:
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Matches
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GENERAL INFORMATION:
APPLICANT: Brechot, Christian
APPLICANT: Brechot, Christian
APPLICANT: Kremsdorf, Dina
APPLICANT: Porchon, Colette
TITLE OF INVENTION: Nucleotide and Peptide Sequences of a
TITLE OF INVENTION: Hepatitis C Virus Isolate, Diagnostic and Therapeutic
TITLE OF INVENTION: Applications
NUMBER OF SEQUENCES: 46
CORRESPONDENCE ADDRESS:
ADDRESSEE: Finnegan, Henderson, Farabow, Garrett &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     178 QNEITLTHPVTKYIMTCMSADLEVVTSTWVLVGGVLAALAAYCLSTGCVVIVGRVVLSGK 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 QNEICLTHPITKYIMACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22; Indels
SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/07/965,285
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 76.4%; Score 534; DB 2; Best Local Similarity 74.4%; Pred. No. 2.7e-54; Matches 99; Conservative 12; Mismatches 22
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REGISTRATION NUMBER: 25,146
REFERENCE/COCKET NUMBER: 05
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-408-4000
    Meyers, Kenneth J.
                                                                                                                                                                 LENGTH: 313 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 TNWQKLEAFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 382 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 74.4%
Matches 99; Conservative
                                                                                                TELEFAX: 202-408-4400
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                       ; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-09-201-912-45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , MOLECULE TYPE: protein US-08-444-818-68
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CLASSIFICATION: 424
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SECONTENT: POTOMIC CALIBRIAN.
SAPPLICANT: POTOMIC COLECTE
TITLE OF INVENTION: Muclectide and Peptide Sequences of a TITLE OF INVENTION: Hepatitis C Virus isolate, Diagnostic and Therapeutic UNMBER OF SEQUENCES. 46
CORRESPONDENCE ADDRESS:
ADDRESSEE: Finnegan, Henderson, Farabow, Garrett & ADDRESSEE: Dunner STRRET: 1300 I Street, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 313;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               22; Indels
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/201,912
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 76.4%; Score 534; DB 2; Best Local Similarity 74.4%; Pred. No. 2.7e-54; Matches 99; Conservative 12; Mismatches 22.
                                                                                                                                                                                  NAME: Meyers, Kenneth J.
REGISTRATION NUMBER: 25,146
REFERENCE/TOCKET NUMBER: 05286-0001-02000
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-408-4000
TELEFAX: 202-408-4400
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/965,285
                                                      FILING DATE: 18-MAR-1993
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 06 882
FILING DATE: 06-JUN-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                 TELEFAX: 202-408-4400
INFORMATION FOR SEQ ID NO: 45:
SEQUENCE CHARACTERISTICS:
LENGTH: 313 amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 TNWOKLEAFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
MOLECULE TYPE: peptide
US-08-487-231-45
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ZIP: 20005-3315
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STATE:
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61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 68, Application US/08444818
Patent No. 6150087
CENERAL INFORMATION: CALEN, David Y.
APPLICANT: Chien, David Y.
TITLE OF INVATION: NANBV Diagnostics and Vaccines NUMBER OF SEQUENCES: 777
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION NATA:
APPLICATION NUMBER: US/08/444,818
05286-0001-00000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Harbin, Alisa A.
REGISTRATION NUMBER: 33,895
REFERENCE/DOCKET NUMBER: 0110.002
TELECOMMUNICATION INFORMATION:
TELEPHONE: (508)359-3865
INFORMATION FOR SEQ ID NO: 68:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/403,590
FILING DATE: 14-MAR-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Chiron Corporation
STREET: 4560 Horton Street
CITY: Emeryville
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APPLICANT: CASEY, JAMES M
APPLICANT: DAILEY, STEPHEN H
APPLICANT: DAILEY, STEPHEN H
APPLICANT: GUTIENEZ, ROBIN A
APPLICANT: GTHEWSKI, RICHARD R
APPLICANT: STEWARY, JAMES L
APPLICANT: RUPRECHT, KEVIN R
TITLE OF INVENTION: HEPATITIS C ASSAY UTILIZING RECOMBINANT
TITLE OF INVENTION: ANTIGENS
CORRESPONDENCE: 59
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/867,611
FILING DATE: 02-JUN-1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSEE: ABBOTT LABORATORIES
F: ONE ABBOTT PARK ROAD, CHAD377/AP6D2
ABBOTT PARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 07/572,822
FILING DATE: 24-AUG-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/614,069
FILING DATE: 07-NOV-1990
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 07/748,561
FILING DATE: 21-AUG-1991
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/748,565
FILING DATE: 21-AUG-1991
ATORNEY AGENT INFORMATION:
NAME: POREMESKI, PRISCILLA E
REGISTRATION NUMBER: 33.207
REFERENCE/DOCKET NUMBER: 33.207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
APPLICATION NUMBER: US/08/179,896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA: APPLICATION NUMBER: US/08/646,757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                            Sequence 47, Application US/08867611 Patent No. 6172189 GENERAL INFORMATION:
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TELEPHONE: 708-937-6365
                                                                                                                                                                                                                                DEVARE, SUSHIL G
DESAI, SURESH M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 592 amino acids
121 TNWOKLEAFWHKH 133
                          |||||||| || ||
282 TNWOKLETFWAKH 294
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
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STREET: ONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY:
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                                                                                                             1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK 60
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                   Query Match 76.4%; Score 534; DB 3; Length 382; Best Local Similarity 74.4%; Pred. No. 3.5e-54; Matches 99; Conservative 12; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Chien, David Y.
APPLICANT: Rutter, William J.
TITLE OF INVENTION: NANBY Diagnostics and Vaccines
NUMBER OF SEQUENCES: 777
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/444,818
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/403,590
FILING DATE: 14 MAR-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Harbin, Alisa A. REGISTRATION NUMBER: 33,895
REFERENCE/DOCKET NUMBER: 0110.002
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 20, Application US/08444818 Patent No. 6150087 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Chiron Corporation
STREET: 4560 Horton Street
CITY: Emeryville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: (508)359-3880 INFORMATION FOR SEQ ID NO: 20: SEQUENCE CHARACTERISTICS: LENGTH: 460 amino acids
                                                                                                                                                                                                                                                                                                                                  ||||||| || || || 108 TNWQKLETFWAKH 210
                                                                                                                                                                                                                                                                                                       TNWOKLEAFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; MOLECULE TYPE: protein US-08-444-818-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
TOPOLOGY: linear
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APPLICANT:
APPLICANT:
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APPLICANT:
APPLICANT:
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US-08-867-611-16
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STATE: II
COUNTRY:
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                                                                                                                                                                                                                                                                                  1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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APPLICANT: DEVARE, SURSHIL G
APPLICANT: DEVARE, SURSHIN M
APPLICANT: CASEY, JAMES M
APPLICANT: DALEY, STEPHEN H
APPLICANT: DALESY, STEPHEN H
APPLICANT: GUTIERREZ, ROBIN A
APPLICANT: STEPHEN H
       Length 592;
                                                                          22; Indels
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   76.4%; Score 534; DB 3; 74.4%; Pred. No. 6.3e-54; iive 12; Mismatches 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEE: ABBOTT LABORATORIES
:: ONE ABBOTT PARK ROAD, CHAD377/AP6D2
ABBOTT PARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/572,822
FILING DATE: 24-AUG-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/614,069
FILING DATE: 07-NOV-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/748,561
FILING DATE: 21-AUG-1991
PRIOR APPLICATION NUMBER: US 07/748,565
FILING DATE: 21-AUG-1991
PRIOR APPLICATION NUMBER: US 07/748,565
FILING DATE: 21-AUG-1991
PRIOR APPLICATION NUMBER: US 07/748,565
FILING DATE: 21-AUG-1991
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APPLICATION NUMBER: US/08/667,611
FILING DATE: 02-UN-1997
CLASSIFICATION: 435
PRICR APPLICATION DATA:
APPLICATION NUMBER: US/08/646,757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US 07/748,566 FILING DATE: 21-AUG-1991 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             us/08/179,896
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 48, Application US/08867611 Patent No. 6172189
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |||||||| || || 408 TNWOKLETFWAKH 420
                                                                                                                                                                                                                                                                                                                                                                                                                               TNWOKLEAFWHKH 133
Query Match 76.4%
Best Local Similarity 74.4%
Matches 99; Conservative
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60064-3500
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CITY: AB
STATE: I
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290 QNEITLTHPVTKYIMTCMSADLEVVTSTWVLVGGVLAALAAYCLSTGCVVIVGRVVLSGK 349
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TITLE OF INVENTION: HEPATITIS C ASSAY UTILIZING RECOMBINANT
TITLE OF INVENTION: ANTIGENS
WUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: ABBOTT LABORATORIES
STREET: ONE ABBOTT PARK ROAD, CHAD377/AP6D2
CITY: ABBOTT PARK
                                                                                                                                                                                                                                                                                                          76.4%; Score 534; DB 3; Length 594; 74.4%; Pred. No. 6.4e-54; Live 12; Mismatches 22; Indels
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/867,611
FILING DATE: 02-JUN-1997
  4834.US.P6
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APPLICATION NUMBER: US 07/572,822
FILING DATE: 24-AUG-1990
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 16, Application US/08867611
Patent No. 6172189
GENERAL INFORMATION:
APPLICANT: DEVARE, SUSHIL G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: GUTIERREZ, ROBIN A
APPLICANT: LESNIEWSKI, RICHARD
APPLICANT: STEWART, JAMES L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DESAI, SURESH M
CASEY, JAMES M
DAILEY, STEPHEN H
DAWSON, GEORGE J
REFERENCE/DOCKET NUMBER: 48
TELECOMMUNICATION INFORMATION:
TELEPHONE: 708-937-6365
TELEFAX: 708-937-9556
INFORMATION FOR SEQ ID NO: 48:
                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 594 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 TNWQKLEAFWHKH 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           410 TNWQKLETFWAKH 422
                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 74.4%
Matches 99; Conservative
                                                                                                                                                                                                              TOPOLOGY: linear MOLECULE TYPE: peptide US-08-867-611-48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
PRIOR APPLICATION DATA:
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Query Match
Best Local Similarity
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TELEPHONE:
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US-08-867-611-18
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COUNTRY:
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APPLICANT:
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APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Gaps
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APPLICANT: DESAI, S.
APPLICANT: DAILEY, S.
AITLE OF INVENTION: HCV SYNTHETIC PEPTIDE FROM NSI REGION NUMBER OF SEQUENCES: 35
CORRESPONDENCE ADDRESS:
ADDRESSEE: ABBOTT LABORATORIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 76.4%; Score 534; DB 3; Best Local Similarity 74.4%; Pred. No. 6.4e-54; Matches 99; Conservative 12; Mismatches 22
                                                               FILING DATE: 21-AGG-1991
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/748,565
FILING DATE: 21-AUG-1991
PRIOR APPLICATION NUMBER: US 07/748,566
FILING DATE: 21-AUG-1991
ATTORNEY/AGENT INFORMATION:
NAME: POREMBSKI, PRISCILLA E
REGISTATION NUMBER: 33,207
REFERENCE/DOCKET NUMBER: 4834.US.P6-
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
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19920821
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REGISTRATION NUMBER: 33.207
REFERENCE/DOCKET NUMBER: 4834PC.02
TELECOMMUNICATION:
                                                   US 07/748,561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 21, Application PC/TUS9206965A GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: ONE ABBOTT PARK ROAD CITY: ABBOTT PARK STATE: ILLINOIS
                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: 16: SEQUENCE CHARACTERISTICS:
               07-NOV-1990
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                                                                                                                                                                                                                                                                                                                                                                             597 amino acids
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TELEPHONE: 708-937-9556
               FILING DATE: 07-NOV-1
PRIOR APPLICATION DATA:
APPLICATION NUMBER: U
                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-867-611-16
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MEDIUM TYPE: Floppy
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                                                                                                                                                                                                                                                                                                                                                                                               amino acid
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ZIP: 60065-3500
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PCT-US92-06965A-21
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APPLICANT: RUPRECHT, KEVIN R
TITLE OF INVENTION: HEPATITIS C ASSAY UTILIZING RECOMBINANT
TITLE OF INVENTION: ANTIGENS
                                                                                                                                                                             Length 597
                                                                                                                                                                                                                       22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILING DATE: 02-JUN-1997
CLASSIFICATION: 435
                                                                                                                                                                               Score 534; DB 5;
Pred. No. 6.4e-54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: ABBOTT LABORATORIES
TREET: ONE ABBOTT PARK ROAD, CHAD377/AP6D2
CITY: ABBOTT PARK
                                                                                                                                                                                                                       12; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: US 07/614,069 FILING DATE: 07-NOV-1990 PRIOR APPLICATION DATA: APPLICATION NUMBER: US 07/748,561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILLING DATE:
APPLICATION NUMBER: US/08/179,896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 18, Application US/08867611
Patent No. 6172189
GENERAL INFORMATION:
APPLICANT: DEVARE, SUSHIL G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GUTIERREZ, ROBIN A
LESNIEWSKI, RICHARD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DANSON, GEORGE J
                                                                                                                                                                               76.48;
TELEFAX: 708-937-9550
INFORMATION FOR SEQ ID NO: 21:
SEQUENCE CHARACTERISTICS:
LENGTH: 597 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DESAI, SURESH M
CASEY, JAMES M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US 07 FILING DATE: 24-AUG-1990
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PRIOR APPLICATION DATA:
                                                                                                                                                                                                                       99; Conservative
                                                                                                                        MOLECULE TYPE: protein PCT-US92-06965A-21
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PRIOR APPLICATION DATA:
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COMPUTER READABLE FORM:
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PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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Sequence 23, Application PC/TUS9206965A

GENERAL INFORMATION:
APPLICANT: DESAI, S.
APPLICANT: DAILEY, S.
TITLE OF INVENTION: HCV SYNTHETIC PEPTIDE FROM NS1 REGION
NUMBER OF SEQUENCES: 3 5
CORRESPONDENCE ADDRESS:
ADDRESSEE: ABBOTT LABORATORIES
STREET: ONE ABBOTT PARK ROAD
CITY: ABBOTT PARK
STATE: ILLINOIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 599
                                                                                                                                                                                                                                                                                                                                                                                                                                                               76.4%; Score 534; DB 3; Length 59 74.4%; Pred. No. 6.4e-54; tive 12; Mismatches 22; Indels
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SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/06965A
FILING DATE: 19920821
                                                                                                                                                                 NAME: POREMBSKI, PRISCILLA E
REGISTRATION NUMBER: 33,207
REFERNCE/DOCKET NUMBER: 4834.US.P6
TELECOMMUNICATION INFORMATION:
TELEPHONE: 708-937-6365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
NAME: POREMBSKI, PRISCILLA E.
REGISTRATION NUMBER: 33,207
REFERENCE/DOCKET NUMBER: 4834PC.02
TELECOMMUNICATION:
TELEPHONE: 708-937-6365
FILING DATE: 21-AUG-1991
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/748,565
FILING DATE: 21-AUG-1991
                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/748,566
FILING DATE: 21-AUG-1991
ATTORNEY/AGENT INFORMATION:
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BEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                   TELEFAX: 708-937-9556
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                      LENGTH: 599 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 TNWOKLEAFWHKH 133
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                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
Matches 99; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: U.S.
ZIP: 60065-3500
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                                                                                       Length 599;
                                                                                    Query Match 76.4%; Score 534; DB 5; Length 59 Best Local Similarity 74.4%; Pred. No. 6.4e-54; Matches 99; Conservative 12; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                                                          Search completed: August 29, 2003, 11:18:57
Job time : 23 secs
599 amino acids
                                                                                                                                                                                                                                                                  121 TNWQKLEAFWHKH 133
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410 TNWQKLETFWAKH 422
       TYPE: AMINO ACID
TOPOLOGY: linear
MOLECULE TYPE: protein
PCT-US92-06965A-23
LENGTH:
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August 29, 2003, 11:16:59; Search time 184 Seconds (without alignments) 98.870 Million cell updates/sec
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699
1 QNEICLTHPITKYIMACMSA.....VIEPIVTINWQKLEAFWHKH 133
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2. /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
3. /cgn2_6/ptodata/2/pubpaa/US66_NEW_PUB.pep:*
4. /cgn2_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
5. /cgn2_6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
6. /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*
7. /cgn2_6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:*
8. /cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
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11. /cgn2_6/ptodata/2/pubpaa/US09_PUBCOMB.pep:*
12. /cgn2_6/ptodata/2/pubpaa/US09_PUBCOMB.pep:*
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18. /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
18. /cgn2_6/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
18. /cgn2_6/ptodata/2/pubpaa/US60_NEW_PUB.pep:*
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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          510680 seqs, 136781880 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Published_Applications_AA:*
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                        OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 2000000000
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Perfect score:
Sequence:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		Description	Sequence 36, Appl	Sequence 36, Appl	Sequence 38, Appl	Sequence 40, Appl	Sequence 38, Appl	Sequence 40, Appl	Sequence 223, App	Sequence 223, App	Sequence 32, Appl	34,	Sequence 32, Appl	34,	Sequence 4, Appli	Sequence 3, Appli	
		QI.	US-09-899-046-36	US-09-878-281-36	US-09-899-046-38	US-09-899-046-40	US-09-878-281-38	US-09-878-281-40	US-09-899-046-223	US-09-878-281-223	US-09-899-046-32	US-09-899-046-34	US-09-878-281-32	US-09-878-281-34	US-09-742-659-4	US-09-891-894-3	US-10-184-150-3
		DB	11	11	11	11	11	11	11	11	11	11	11	11	σ	11	12
		Match Length DB	133	133	133	133	133	133	209	209	133	133	133	133	3011	3011	3011
æ	Query	Match	100.0	100.0	6.86	6.86	6.86	98.9	6.86	98.9	1.96	96.1	96.1	96.1	77.1	77.1	77.1
		Score	669	669	691	169	691	691	691	691	672	672	672	672	539	539	539
	Result	No.	н	7	m	4	S	9	7	8	6	10	11	12	13	14	15

16	539		3012	10	US-09-238-076-2	Sequence	4
18 18	539	77.1	3012	110	100	Sequence	23,2
20 21	534 534	76. 76.	2894 3011	15	US-10-044-995-23 US-09-916-359-2	Sequence	23,
22	534	76.	3011	10	US-09-238-076-20	Sequence	206
22.0	534	76.	3011	101	US-09-929-955-1	Sednence	11.
7 7 7 7 7	534		3011	111	US-09-747-419-20 US-09-995-937-20	Sequence	20, Appl
28	534	76.	3011	14	US-U9-91/-363-20 US-10-104-966-1	Seguence	, ,
50	534	76.	3011	15	US-10-259-275-20	Seguence	20
31	492	70.	1692	11	US-09-919-901-4	Sednence	4, Appli
32	492	70	1692	11	US-09-919-901-11	Sequence	118
34	492	70.	2201	14	US-10-085-476-2	Sequence	200
36	492	70.	2307	11	US-09-919-901-2 US-09-919-901-9	Sequence	, 0
37	492		2307	11	US-09-919-901-16	Sequence	16,
10 O	4 90	70.	2985	٦ ۲	* 4	Seguence	
40	484		2201	173	33	Sednence	<u>,</u>
41	484	60 60 60 60 60 60 60 60 60 60 60 60 60 6	220I 484	14 1	2 0	Sequence	3, Ap
4 4 3	466	. 99	484	1::	US-09-878-281-198	eouenbes	198,
44 45	462		481 481	11	27	Sequence	27
					ALIGNMENTS		
US-09-899-046-36; Sequence 36, Api; Publication No.	-046-3 e 36, tion N	46-36 36, Application US/	ion US 300082	/098 74A1	//09899046 77A1		
GENERA APPI.	TCANT	OKMATION:					
; TITLE	E OF	INVENTION:		sed	of hepatiti		
; TITLE (P OF	INVENTION: SEOUENCES	::	otyp 0	iagnosis,	prophylaxis and th	therapy.
; COMP	E. E.	READABI	0				
₩ Ö	MEDIUM T COMPUTER	YPE: : IB	5 S	disk mpatib	e		
GO .	OPERATING SOFTWARE.	O)	: PC	C-DOS/MS	S-DOS	(EBO)	
CURRENT	ENT AL	APPLICATION DATA	A,	4			
AP FT	PLICAS	APPLICATION NUMBER: FILING DATE:		60/sn	/09/899,046		
PRIO	R APPI	PRIOR APPLICATION DATA	••	. !			
, AP	APPLICATION FILING DATE:	APPLICATION NUMBER: FILING DATE:		08/36	2,455		
; INFORMATION FOR	ATION	FOR SEQ ID	z	36	••		
SEOU ;	ENCE (SEQUENCE CHARACTERIST ENGTH: 133 amino	destics ino aci	ds:			
; ; MOLE(; US-09-899	TYPE: a TOPOLOGY MOLECULE T -899-046-3	amino a Y: lin FYPE: 36	cid ear protein				
Query M	Match		100	.0.	DB 11;	Length 133;	
Matches	13	similarity 3; Conser	ıoo vative	5		Indels 0;	Gaps 0;
Qy	7	ONEICLTHE	TTKYIM	ACMS	QNEICLTHPITKYIMACMSABLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK	YCLSVGCVVIVGHI	ELGGK 60
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SEQUENCE CHARACTERISTICS
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US-09-899-046-38
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                     LENGTH:
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 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 133;
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/899,046
                                                                                                                                                                                                    APPLICAMY:
TITLE OF INVENTION: New sequences of hepatitis C vir TITLE OF INVENTION: genotypes for diagnosis, prophyl NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPOTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25 (EP
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/878,281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 699; DB 11;
llarity 100.0%; Pred. No. 3.6e-72;
Conservative 0; Mismatches 0;
                                                                                                                                 US-09-878-281-36
; Sequence 36, Application US/09878281
; Publication No. US20030032005A1
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Publication No. US20030008274A1
GENERAL INFORMATION:
APPLICANT:
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APPLICATION NUMBER: 08/362,455
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APPLICATION NUMBER: 08/362,455
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amino acid
                                  121 TNWQKLEAFWHKH 133
                                                      121 TNWQKLEAFWHKH 133
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133; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/899,046
FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
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Pred. No. 3e-71;
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; GENERAL INFORMATION:
APPLICANT:
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
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99.28;
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                                                                                              Query Match 98.9
Best Local Similarity 99.2
Matches 132; Conservative
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Best Local Similarity 99.2*
Matches 132; Conservative
              TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOLECULE TYPE: protein
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MEDIUM TYPE: Floppy
amino acid
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61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKEKVLGLLQRATQQQAVIEPIVT 120
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                      1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK 60
                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
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Pred. No. 5.3e-71;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                              ; Sequence 223, Application US/09899046
; Publication No. US20030008274A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
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amino acid
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INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-899-046-223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC
OPERATING SYSTEM:
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APPLICANT:
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Best Local 3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIOM TYPE: RIOPPY disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: New sequences of hepatitis C virus TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy. NUMBER OF SEQUENCES: 270
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                                                                                                                                                                      SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO) CURRENT APPLICATION DATA: APPLICATION NUMBER: US/09/878,281
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 691; DB 11;
Pred. No. 3e-71;
0; Mismatches 1;
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Pred. No. 3e-71;
0; Mismatches
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COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/362,455
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APPLICATION NUMBER: 08/362,455
                                                                                                                                                                                                                                                                                            FILING DATE:
INFORMATION FOR SEQ ID NO: 38:
SEQUENCE CHARACTERISTICS:
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99.2%;
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99.2%;
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amino acid
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Best Local Similarity 99.2
Matches 132; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                             ; MOLECULE TYPE: protein US-09-878-281-38
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MEDIUM TYPE: Floppy
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Best Local Similarity
Matches 132; Conserv
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GENERAL INFORMATION
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIR Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
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      US/09/878, 281
                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
FILING DATE:
INFORMATION FOR SEQ ID NO: 223:
SEQUENCE CHARACTERISTICS:
LENGTH: 209 amino acids
TYPE: amino acid
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Sequence 32, Application US/09899046

Publication No. US20030008274Al

GENERAL INFORMATION:
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amino acid
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121 SNWQKLETFWHKH 133
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                                                                                                                                                                             TOPOLOGY: linear
MOLECULE TYPE: protein
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MOLECULE TYPE: protein
APPLICATION NUMBER:
FILING DATE:
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61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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Publication No. US20030032005A1
GENERAL INFORMATION:
APPLICANT:
TITLE OF INVENTION: Genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
                                                                                              New sequences of hepatitis C virus genotypes for diagnosis, prophylaxis and therapy. 270\,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 672; DB 11;
Pred. No. 4.4e-69;
6; Mismatches 3;
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APPLICATION NUMBER: US/09/878, 281
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IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                          COMPUTER READABLE FORM SENDING TYPE: Floppy disk CMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                Sequence 34, Application US/09899046
Publication No. US20030008274A1
GENERL INFORMATION:
APPLICANT:
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
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Best Local Similarity 93.2%;
Matches 124; Conservative
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LENGTH: 133 amino acids
TYPE: amino acid
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121 SNWQKLETFWHKH 133
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LENGTH: 133 amino acids
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MOLECULE TYPE: protein
US-09-899-046-34
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy of
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                                                                                                TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
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TOPOLOGY: linear
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US-09-899-046-34
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Wright-Minogue, Jacquelyn
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LENGTH: 3011
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US-10-184-150-3
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Best Local S
Matches 101
APPLICANT:
                                                                                                                                                                                                        TYPE: PRT
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                                                                                                           1 ONEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK 60
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                           1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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                               Score 672; DB 11; Length 133;
Pred. No. 4.4e-69;
6; Mismatches 3; Indels (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25 (EPO)
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Pred. No. 4.4e-69;
6; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/878,281
                                                                                                                                                                                                                                                                                                                            ; Sequence 34, Application US/09878281; Publication No. US20030032005A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/362,455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Sequence 4, Application US/09742659
; Patent No. US20010034019A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Hong, Zhi
APPLICANT: Buckfiewicz, Nancy J.
APPLICANT: Zhong, Weidong
APPLICANT: Ingravallo, Paul
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93.2%;
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ilarity 93.2%;
Conservative
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mino acid
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121 SNWQKLETFWHKH 133
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Best Local Similarity 93.2'
Matches 124; Conservative
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OPERATING SYSTEM:
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                           Query Match
Best Local Similarity
Matches 124; Conserv
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US-09-878-281-34
JS-09-878-281-32
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APPLICANT: OLSON, William
APPLICANT: OLSON, William
APPLICANT: Maddon, Paul
TITLE OF INVENTION: USES OF DC-SIGN AND DC-SIGNR FOR INHIBITING HEPATITIS C VIRUS
FILE REFERENCE: 2048/64896/JPM/SHS
CURRENT APPLICATION NUMBER: US/09/891,894
CURRENT FILING DATE: 2001-06-26
NUMBER OF SEQ ID NOS: 3
SOFTWARE: PALENTIN version 3.0
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APPLICANT: Lau, Johnson Y.
APPLICANT: Lemon, Stanley M.
TITLE OF INVENTION: Chimeric HCV/GBV-B viruses
FILE REFERENCE: 1D01116
CURRENT APPLICATION NUMBER: US/09/742,659
CURRENT FILING DATE: 2000-12-21
PRIOR APPLICATION NUMBER: US 60/171,469
PRIOR FILING DATE: 1999-12-22
NUMBER OF SEC 1D NOS: 16
SOFTWARE: Patentin Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                     77.1%; Scor
75.9%; Predative 10;
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, Sequence 3, Application US/09891894
; Publication No. US20030013081A1
; GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: hepatitis c virus US-09-891-894-3
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Best Local Similarity 75.9
Matches 101; Conservative
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1632 QNEVTLTHPITKYIMTCMSABLEVVTSTWVLVGGVLAALAAYCLSTGCVVIVGRIVLSGR 1691
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AF046866 Hepatitis
X79819 Hepatitis C
X76918 Hepatitis C
D17763 Hepatitis C
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A40633 Sequence 33
AX031609 Sequence
AX03181 Sequence
AX03181 Sequence
AX03181 Sequence
AX03181 Sequence
BD172139 New seque
BD172139 New seque
BD172139 New seque
BD172140 New Seque
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AX031613 Sequence
AX032153 Sequence
BD772141 New seque
A40637 Sequence 37
AX031615 Sequence
AX031615 Sequence
AX031617 Sequence
AX031887 Sequence
AX031897 Sequence
AX032157 Sequence
BD172143 New Seque
BD172143 New Seque
AX032180 Sequence
AX03280 Sequence
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E10840 cDNA sequen
E10841 cDNA sequen
D49374 Hepatitis C
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U14277 Hepatitis C
AF042791 Hepatitis
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                                                                                                                                                                                                                                                                                                                                                     Description
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HCVCENS1
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BD172226
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AX031881
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Match
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                                                                                                                                                                              US-09-638-693-36
699
1 QNEICLTHPITKYIMACMSA......VIEPIVTTNWQKLEAFWHKH 133
             GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                              OM protein - nucleic search, using frame_plus_p2n model
                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
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Maximum Match 100%
Listing first 45 summaries
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Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
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                                                                                                                                                                           Sequences of hepatitis c virus genotypes and their use as therapeutic and diagnostic agents
Patent: EP 1004570-A 35 31-MAY-2000;
INNOGENETICS NV (BE)
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Length:
Matches:
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Mismatches:
Indels:
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/clone="BR36-20-164"
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Sequence 35 from Patent EP1004670.
AX031613 GI:10278850
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unidentified
unclassified.
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100 c 101 g 90 t
            05-MAR-1997
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S Maertens, G. and Stuyver, L.
NAB SEQUENCES OF HEPATITIE C VIRUS GENOTYPES AND THEIR USE AS THERAPEUTIC AND DIAGNOSTIC AGENTS
L PATENT: WO 9425601-A 35 10-NOV-1994;
INNOGENETICS NV (BE)
Other publication CA 2139100 941110
Other publication AU 6722294 941121
Other publication RV 108030 950906
Other publication FI 94606 941223
Other publication NV 944967 941221
Other publication NV 75084237 950911.
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conflict with the conceptual translation"

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100 c 101 g 90 t
                    PAT 20-SEP-2000
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                                      401 bp
from Patent EP0984068
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             303 GTCCTTGGATTGCTGCAGCGAGCCACCCAACAACAAGCTGTCATTGAGCCCATAGTAACT 362
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S Macrtens, G. and Stuyver, L.
NEW SEQUENCES OF HEPATITIS C VIRUS GENOTYPES AND THEIR USE AS THERAPEDTIC AND DIAGNOSTIC AGENTS

L PATENT: WO 9425601-A 37 10-NOV-1994;
INNOGENETICS NV (BE)
Other publication CA 2139100 941110
Other publication CA 139100 941121
Other publication CN 1108030 950906
Other publication CN 1108030 950906
Other publication NO 944967 941223
Other publication NO 944967 94123
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A40637
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is Americans, G. and Stuyver, L.

New sequences of hepatitis C virus genotypes for diagnosis,
prophylaxis and therapy
L. Patent: JP 2002233389-A 18 20-AuG-2002;
NV INNOGENETICS SA
OS Unidentified
PN JP 2002233389-A/18
PP 20-AuG-2001
PF 21-NOV-2001 JP 2001356707
PR 27-APR-1993 EP 93401099.2,05-AuG-1993 EP 93402019.9 PI
GEERT MAERTENS, LIEVEN STUYVER
PC C12N15/O9, A61K35/76, A61K38/00, A61K39/305, A61K39/395,
PC A61K48/00,
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             PAT 18-FEB-2003
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0y 61 ProAlaileValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys 80		therapeutic and diagnostic agents JOURNAL Patent: EP 1004670-A 37 31-MAY-2000; INNOGENETICS NV (BE) Location/Qualifiers Location/Qualifiers 1. 401 /organism="unidentified" /mol_Lype="genomic DAA" /db_xref="taxon:32644" /clone="BR36-20-166" /clone="BR36-20-166" /codon.start=1 /codon.start=1	/protein_id="CAC09683.1" //db_xref="G1:10278853" //db_xref="G1:10278853" //tb_xref="G1:10278853" //tb_xref="G1:1027885" //tb_xref="G1:10278853" //tb_xref="G1:1027853"		Oy 1 GlnAsnGluileCysLeuThrHisProileThrLysTyrIleMetalaCysMetSerala 20	Oy 41 AlaTyrCysLeuSerValG1yCysValValIleValG1yHisIleG1uLeuG1yG1yLys 60
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	AX031885 LOCUS AX031885 LOCUS AX031885 AX031885 LOCUS BEFINITION Sequence 37 from Patent EP0984068. ACCESSION AX031885.1 GI:10279035 KEYWORDS unidentified ORGANISM unidentified	unclassified. REFERENCE 1 AUTHORS Maertens,G. and Stuyver,L. TITLE Sequences of hepatitis c virus genotypes and their use as therapeutic and diagnostic agents JOURNAL Patent: EP 0984068- 37 08-MAR-2000; FEATURES LOCATION/Qualifiers	SQ	GLLORATOQQAVIEPIVTTNWQKLEAFWHKH" BASE COUNT 110 a 100 c 101 g 90 t ORIGIN Alignment Scores:		Qy 1 GlnAsnGluileCysLeuThrHisProileThrLysTyrileMetAlaCysMetSerAla 20 	Oy 21 AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla 40	Qy 41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys 60	Qy 61 ProAlalleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluSys 80	Qy 81 SerGinalaalaProTyrileGluGinalaGinValitealaHisGlnPheLysGlyLys 100
Db 183 CCGGCAATCGTTCCAGACAAAGAGGTGTTGTATCAACAATACGATGGAAGAGTGC 242 Qy	SULT 9 031617 AX031617	SOURCE unidentified ORGANISM unidentified Unclassified. REFERENCE 1 AUTHORS Maertens, G. and Stuyver, L. TITLE Sequences of hepatitis c virus genotypes and their use as therapeutic and diagnostic agents JOURNAL Patent: EP 1004670-A 39 31-MAY-2000; INNOGRNETICS NV (BE)	FEATURES Location/qualiflers 1. 401 / voganism="unidentifled" //mol_type="genomic DNA" //db_xref="taxon:32644" //clone="BR36-20-165" CDS /3401 /note="unnamed protein product" //protein_id="CA09684.1" //db_xref="G1:10278855"	/translation="QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCL SVGCVVIVGHIELGGRPAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKEKVL GLLQRATQQQAVIEPIVYTNWQKLEAFWHKH" BASE COUNT 111 a 100 c 100 g 90 t	Alignment Scores: 4.15e-75 Length: 401 Pred. No.: 61.00 Matches: 132 Score: 61.00 Conservative: 0 Best Local Similarity: 99.25% Mismatches: 1 Query Match: 6.86% Indels: 0 DB: 6.86% Caps: 0	US-09-638-693-36 (1-133) x AX031617 (1-401) Oy 1 GlnAsnGluIleCysLeuThrHisProIleThrLysTyrIleWetAlaCysWetSerAla 20	Db 3 CAAAATGAAATCTGCTTGACACCCCCATCACAAATACATCGGGTTGCTGTCACT 62 Oy 21 AspleudluValThTTrFTPValLeuLeuGlyGlyValLeuAlaAlaAlaCeuAla 40	Db 63 GATCTGGAAGTAACCACCAGCACCTGGGTTTTGCTTGGAGGGTCCTCGGGCCTAGCG 122. Qy 41 AlaTyrCysLeuSerValGJyCysValValIleValGJyHisIleGluLeuGJyGJyLys 60	Db 123 GCCTACTGCTGCTGGTTGTGTTGTGGTTGTGGGTATCGACTGGGGGGCAAG 182 Qy 61 ProAlaileValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys 80	Db 183 CCGCAATCGTTCCAGACAAGGGTGTTGTATCAACAATACGATGGAAGAGTGC 242

Oy 101 Alleged the grant control of a factor of a fact	AX0315 LOCUS LOCUS ACCESI VERSION KEYWORD SOURCE ORGAN	REFERENCE 1 ACTHORS Macrtens, G. and Stuyver, L. TITLE Sequences of hepatitis c virus genotypes and their use as therapeutic and diagnostic agents JOURNAL Patent: EP 0984067-A 37 08-MAR-2000; INNOGENETICS NV (BE) FEATHRES	urce	BASE COUNT 110 ORIGIN	Alignment Scores: 4.15e-75 Length: 401 Pred. No.: 691.00 Matches: 132 Score: 691.00 Matches: 0 Bercent Similarity: 99.25\$ Conservative: 0 Best Local Similarity: 99.25\$ Mismatches: 1 Query Match: 6 Gaps: 0 DB: 6 Conservative: 0 DB: 7 Conservat	1 GlnAsnGluileCysLeuThrH 	21 AspLeuGluvalThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla	41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys 	Oy 61 ProAlalleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluCluCys 80 IllIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
101 ValleuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaVallleGluProileValThr 120 103 ValleuGlyLeuCeuGlnArgAlaThrGlnGlnGlnAlaVallleGluProileValThr 120 103 GTCCTFGGATTGCTGCCAGCGAGCCACCACACACAGCTGTCATTGAGCCCATAGTAACT 362 121 ThrAshTrpGlnLySteuGluAlaPheTrpHisLySHis 133 1111111111111111111111111111111111		unidentified unclassified. Maertens,G. and Stuyver,L. Sequences of hepatitis c virus genotypes and their use as therapeutic and diagnostic agents Patent: EP 0984066-A 39 08-WAR-2000.	INNOGENETICS NV (BE) Location/Qualifiers 1401 /organism="unidentified" /mol_type="genomic DNA" /db_xref="taxon:32644"		ıı a Y: rity	3-36 (1-133) x AX031887 (1-401) 1 GlnAsnGlulleCysLeuThrHisProlleThrLysTyrIleMetAlaCysMetSerAla 20		AGCG YLYS	123 GCCIACTGCTGTGTGGTGTGTGTGTGTGTGGGGTCATATCGAGCTGGGGGGGAAG 182 61 ProalaileValProaspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys 80

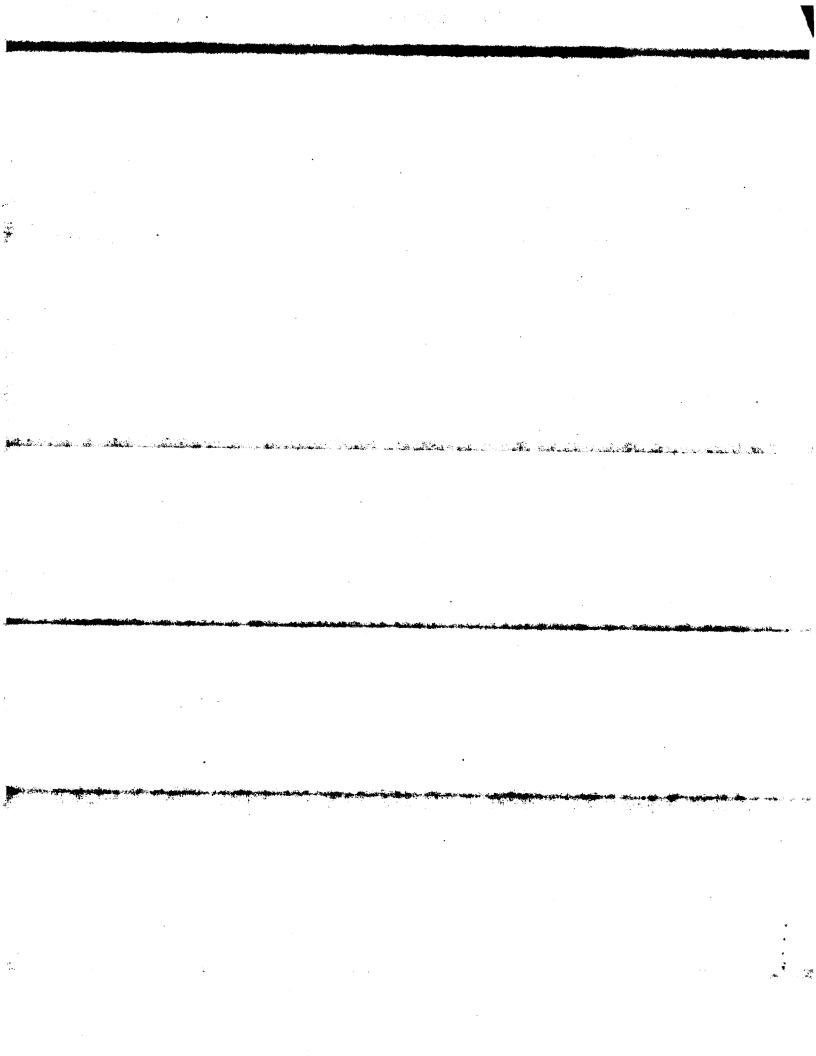
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Maertens, G. and Stuyver, L.
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Sequences of hepatitis c virus genotypes and their use as therapeutic and diagnostic agents
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F MAERTENS, LIEVEN STUYVER
C12N15/09,A61K35/76,A61K38/00,A61K39/00,A61K39/395,A61K39/395,
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New sequences of hepatitis C virus genotypes for diagnosis,
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Maertens.G. and Stuyver.L.
Me sequences of hepatitis C virus genotypes for diagnosis, prophylaxis and therapy Patent. JP 200223389-A 20 20-AUG-2002;
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                                                                                                                                                              DEFINITION
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                                                                                                                             RESULT 15
BD172143
LOCUS
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AUTHORS
TITLE
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KEYWORDS
SOURCE
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SerGlnAlaAlaProTyrIleGluGlnAlaGlnValIleAlaHisGlnPheLySGlyLys 100
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                                                     ProAlaIleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys
41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
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COUNTAIN 1112 PALL.CL...

COUNTAIN 1112 PALL.CL...

MODEL-frame+_p20.model_-DEV-xlh

Q-/cgn2_1/USPTO_spool/US09638693/runat_25082003_173259_21642/app_query.fasta_1.327

D-8-M. Geneseq_190un03 - QFWPTM-fastap - SUFFIX-rung - MINNATCH-0.1 - LOOPECL=0

LLOOPEXT-0 - UNITS-bits - START-1 - END--1 - MATRIX-blosum62 - TRANS-human40.cdi

LLST-45 - DOCALIGN-200 - THR_SCORE-pct - THR_MAX-lOO - THR_MIN-0 - ALIGN-15

MODE-LOCAL - OUTFMT-pc - NORM-ext - HEAPSIZE-500 - MILEN-0 - MAXIEN-200000000

-USER-USO9638693_eCGN_11_312_erunat_25082003_173259_21642 - NCPU-6 - ICPU-3

NO_MMAP - LARGEQUERY - NEG_SCORES-0 - WAIT - DSPBLOCK-100 - LONGLOG

-DEV_TIMEOUT-120 - WARN_TIMEOUT-30 - THREADS-1 - XGAPOP-10 - XGAPEXT-0.5 - FGAPOP-6

-DEV_TIMEOUT-310 - WARN_TIMEOUT-30 - THREADS-1 - DELEXT-7
                                                                                                                                                                                                                                                                                       (without alignments)
1495.939 Million cell updates/sec
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/ SIDSI/gggdatz/geneseqrenembl/NA1989.DAT:*
/ SIDSI/gggdatz/geneseqrenembl/NA1991.DAT:*
/ SIDSI/gggdatz/geneseqrenembl/NA1992.DAT:*
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/ SIDSI/gggdatz/geneseqrenembl/NA20010.DAT:*
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/ SIDSI/ggdatz/geneseqrenembl/NA2001B.DAT:*
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/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1983.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1984.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1986.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1986.DAT:*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*
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1: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:
2: /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:
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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                                                                                            nucleic search, using frame_plus_p2n model
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Listing first 45 summaries
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Xgapop 10.0 , Xgapext
Ygapop 10.0 , Ygapext
Fgapop 6.0 , Fgapext
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Maximum DB seq length: 2000000000
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Hepatitis C virus
Combined open read
Hepatitis C virus
CKS-HCV antigen
CLOne pHCV-69 cont
CLOne pHCV-69 cont
HCV CLOODI recombi
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(first entry) Hepatitis C virus type 3. Length 1414 1420 1420 1791 1791 1791 1791 1797 1797 9646 9646 12980 12980 16622 712 712 1310 1310 1382 2579 2579 3075 3075 3075 5300 6609 6905 1797 % Query Match I 96.1 96.1 87.3 86.8 86.8 86.6 0000 25-MAR-2003 01-AUG-1995 RESULT 1 Result Š

Location/Qualifiers

Key

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed,

/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2003.DAT:*

/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2002.DAT

us-09-638-693-36.rng

302

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ValLeuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaValIleGluProIleValThr 120
                                                                          compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (1) the region spanning positions of particularly (1) the region spanning positions of Core/E1 region of HCV subtype 3s; (ii) the region spanning positions 4080-5292 of the NS34 region of RCV type 3; (iii) the region spanning positions 8021-8215 of the NS5 region of HCV type 3; (iv) the credion spanning positions 8031-8215 of the NS5 region of the BR36 subgroup of HCV subtype 3s; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the N33/NS4 cregion of HCV subtype 3a and is taken from a clone designated
 New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                                                                                                                                                                                                                                                                                                                                                                             detection; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                         Hepatitis C virus; HCV; primer; probe; detection; diagnosi
classification; immunisation; prophylaxis; serotyping; ss.
                                                                                                                                ThrasnTrpGlnLysLeuGluAlaPheTrpHisLysHis 133
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(first entry)
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05-AUG-1993;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Compositions comprising at least 5, and pref. 8 or more contiguous nuclectides selected from an HCV type 3 genomic sequence, more particularly (1) the region spanning positions 417-957 of the Core/El region of HCV subtype 3s; (1i) the region spanning positions 4892-5292 of the NS3 region of HCV type 3; (1i) the region spanning positions 8023-8235 of the NS5 region of HCV HCP 5; (1v) the sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV for the detection of antibodies directed against HCV and for several and for serotyphing. This sequence corresponds to the NSS/NS4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   and for serotyping. This sequence corresponds to the NS3/NS4 region of HCV subtype 3a and is taken from a clone designated
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Matches:
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P-PSDB; AAR63288.
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                                                                                                           AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
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                                                                                ProAlaIleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys
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                                                                                                    AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla
                                                                                                                                                                                                                                                                                                                                              probe; detection; diagnosis;
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classification; immunisation; prophylaxis; serotyping; ss.
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Matches:
Conservative:
Mismatches:
Indels:
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/*tag= a
/product= NS3/NS4 polypeptide.
                                             Gaps:
                                                           US-09-638-693-36 (1-133) x AAQ78041 (1-401)
                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                               Hepatitis C virus NS3/NS4 region.
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                         Percent Similarity:
Best Local Similarity:
     Alignment Scores:
Pred. No.:
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                                        s - and related immunisation,
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Matches:
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                                                                                                                              Claim 2; Page 128; 404pp; English
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Best Local Similarity:
P-PSDB; AAR63290
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41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
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05-AUG-1993;
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01-AUG-1995
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sequence, may be used as primers to amplify nucleic acid from an isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for serotyping.

(Updated on 25-MAR-2003 to correct PN field.)
                               HCV sequence used as hybridisation probe in identification method.
                                                                                                                                                                                                                                                                                                                                                              New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                      Hepatitis C virus; HCV; primer; probe; detection; diagnosis; classification; immunisation; prophylaxis; serotyping; ss.
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Mismatches:
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Matches:
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Best Local Similarity:
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                          ProAlaIleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys
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/product= NS3/NS4 polypeptide.
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93EP-0402019.
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isolate belonging to a specific genotype, or as a probe for specific detection/classification of nucleic acid. Polypeptides encoded by the nucleotides in such compositions may be used for immunisation against HCV, for the detection of antibodies directed against HCV and for sercityling. This sequence corresponds to the NSJ/NS4
                                     region of HCV subtype 3a and is taken from a clone designated
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Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                                                                                                                                                                                                                               Compositions comprising at least 5, and pref. 8 or more contiguous nucleotides selected from an HCV type 3 genomic sequence, more particularly (i) the region spanning positions 417-957 of the Core/Fil region of HCV subtype 3a; (ii) the region spanning positions 4892-5292 of the NS3 region of HCV type 3; (iii) the region spanning positions 4892-5292 of the NS3/4 region of HCV type 3; (iv) the region spanning positions 8023-8235 of the NS3/4 region of HCV type 3; (iv) the subgroup of HCV subtype 3a; or (v) an HCV subtype 3c genomic sequence, may be used as primers to amplify nucleic acid from an
                                                                                                                                                                                                                     New polynucleotide sequences from hepatitis C virus - and related vectors, polypeptide(s) and antibodies, useful for immunisation, treatment, diagnosis and typing of HCV isolates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the nucleotides in such compositions may be used for Immunisation, against HCV, for the detection of antibodies directed against HCV and for serotyping. This sequence corresponds to the NS3/NS4 region of HCV subtype 3a and 1s taken from a clone designated
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124
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Conservative:
Mismatches:
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                                                                                                                                                                                                                                                                                                           Claim 2; Page 122-123; 404pp; English.
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672.00
97.74%
93.23%
96.14%
93EP-0401099.
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                                                                    (INNO-) INNOGENETICS NV
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Best Local Similarity:
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  27-APR-1993;
                      05-AUG-1993;
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us-09-638-693-36.rng

241

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99

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2 ACACACCCGGCCACAAAAUACAUCAUGGCAUGCAUGUCAGCUGGCGAAGUAACCACC
                                                                                                                                                                       7 ThrHisProlleThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluValThrThr
                                                    SerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeuSerVal
                                                                                                      GlyCysValValIleValGlyHisIleGluLeuGlyGlyLysProAlaIleValProAsp
                                                                                                                                                      LysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Non-coding region; hepatitis C virus; blood donor; type 2; type 1; HCV; NS-5; phylogeny; differentiation; NS-3; core region; type 3; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The sequences given in AAQ43106-111 show bases 4911-5277 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA encoding antigenic peptide(s) of new types of hepatitis (
virus – for diagnosing and treating HCV infection, screening
blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HCV NS4 coding region from donor T0040.
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92GB-0013362.
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(first entry)
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24-JUN-1992;
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23-SEP-1993
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Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ41058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 3 and type 1 sequences.
                                                                                                                                                                                           region; hepatitis C virus; blood donor; type 2; type 1; phylogeny; differentiation; NS-3; core region; type 3; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DNA encoding antigenic peptide(s) of new types of hepatitis (
virus – for diagnosing and treating HCV infection, screening
blood samples and identifying different HCV types
ThrAsnTrpGlnLysLeuGluAlaPheTrpHisLysHis 133
             367
118
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Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                                                    HCV NS4 coding region consensus sequence.
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92GB-0013362.
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610.00
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97.52%
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                                                                           AAQ43111 standard; DNA; 367
                                                                                                                              (updated)
(first entry)
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P-PSDB; AAR37937.
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24-JUN-1992;
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23-SEP-1993
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Pred. No.:
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HCV; NS-5;
                                                                                                                                                                                                                                     Synthetic
121
                                                                                                      AAQ43111;
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                                                                                                                                                                                                                                                                                                                                                                                                                                     HCV genome revealed the existance of three distinct groups of HCV. Manalysis of the region encompassing -255 to -62 of the 5, non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were sequences between the three groups. Two of the groups identified were appeared to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phytogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 3 and type 1 sequences.
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                                                                                                                                                                                                                               LysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyr
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                                                                                                                Sequence 367 BP; 96 A; 92 C; 101 G; 78 U; 0 other;
                                                                                                                                            Length:
Matches:
Conservative:
Mismatches:
Indels:
                                                                                              (Updated on 25-MAR-2003 to correct PN field.)
                                                                                                                                                                                           Gaps:
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                                                                                                                                                                                                             US-09-638-693-36 (1-133) x AAQ43106 (1-367)
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87.27%
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Best Local Similarity:
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23-SEP-1993
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The sequences given in AAQ43106-111 show bases 4911-5277 of the NS4 region of hepatitis C virus-3 (HVV-3) samples.from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HVV genome revealed the existance of three distinct groups of HVV.

Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43088-75) showed a difference of 9-14% in the nucleocitiee squences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the N3 region (see AAR37927-30) showed a high degree of sequence diversity with type 3 being phylogenetically different to type 1 and 2. The same region between type 3 and type 1 sequences.

C degree differentiation was noted in the NS-5 (see AAR37923-26) and core region between type 3 and type 1 sequences.

C (Updated on 25-MAR-2003 to correct PN field.)
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                                                                                                                                                                                                                     DNA encoding antigenic peptide(s) of new types of hepatitis (
virus – for diagnosing and treating HCV infection, screening
blood samples and identifying different HCV types
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Mismatches:
Indels:
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Matches:
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                                                                    SERVICES AGENCY
                                                                                                             PL;
91GB-0024696.
92GB-0013362.
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607.00
98.35%
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P-PSDB; AAR37936.
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Best Local Similarity:
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                                                                  (COMM-) COMMON
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ACCUGGGUGUUGCUUGGAGGGGUCCUCGGGCCCUAGCGGCCUACUGCUUGUCACAGCGGC
                                        GluGlnAlaGlnValIleAlaHisGlnPheLysGlyLysValLeuGlyLeuLeuGlnArg 107
                                                                                                                                                                                                       AlaThrGlnGlnGlnAlaValIleGluProIleValThrThrAsnTrpGlnLysLeuGlu 127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present sequence represents cDNA to a hepatitis C virus (HCV) genomic RNA. The sequence encodes a polypeptide contg. a 3023 amino acid sequence (see AAR94462) which can be easily detected by antibodies in an assay for the detection of HCV. The DNA and the protein are useful for classifying the subtype of HCV. At least a part of the protein may be used as a vaccine against HCV.
                                                                                               GluValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIle
                                                                                                                                                                 Hepatitis C virus genomic RNA, DNA and related proteins - useful for detection, diagnosis and identification of hepatitis C virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                    hepatitis C virus; antibody; detection; diagnosis; vaccine; classify; subtype; ss.
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Matches:
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                                                                                                                                                                                                                                                                                                                                          AAT13279 standard; cDNA; 9444 BP.
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605.00
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hepatitis C virus.
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363 GCC 365
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HisProlleThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluValThrThrSer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              98 G; 75 U; 0 other;
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Matches:
Conservative:
Mismatches:
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                                                                                                          HCV NS4 coding region from donor T0038.
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                                                                                                                                                                                                     Location/Qualifiers 3..365 /*tag= a
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              AAQ43107 standard; DNA; 365 BP
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92GB-0013362.
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P-PSDB; AAR37933.
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24-JUN-1992;
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23-SEP-1993
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P-PSDB; AAR37934.
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23-SEP-1993
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blood samples and identifying different HCV types
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Mismatches:
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Matches:
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                                           Disclosure; Fig 9a; 120pp; English.
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(first entry)
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84.418
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Best Local Similarity:
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Page 10

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AAV59361 standard; cDNA; 9646 BP
                                             11-JAN-1999
  The sequences given in AAQ43106-111 show bases 4911-5277 of the NS4 region of hepatitis C virus-3 (HCV-3) samples from 5 blood donors and a consensus sequence. Analysis of this and other regions of the HCV genome revealed the existance of three distinct groups of HCV. Analysis of the region encompassing -255 to -62 of the 5' non coding region (see AAQ43058-75) showed a difference of 9-14% in the nucleotide sequences between the three groups. Two of the groups identified were similar to those of HCV varients termed type 1 and 2, whilst the third appeared to represent a novel type of virus. Comparison of the NS3 included the NS3 behing phylogenetically different to type 1 and 2. The same degree differentiation was noted in the NS-5 (see AAR37923-26) and core frigion between type 3 and type 1 sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CysValValIleValGlyHisIleGluLeuGlyGlyLysProAlaIleValProAspLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GluValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIle
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GluGlnAlaGlnValIleAlaH1sGlnPheLysGlyLysValLeuGlyLeuLeuGlnArg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AlaThrGlnGlnGlnAlaValIleGluProIleValThrThrAsnTrpGln 124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA encoding antigenic peptide(s) of new types of hepatitis C virus - for diagnosing and treating HCV infection, screening blood samples and identifying different HCV types
                                                                                                                                                                                                                                                                                                                                                                                                                                      353
112
2
3
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                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 353 BP; 91 A; 93 C; 94 G; 75 U; 0 other;
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Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-638-693-36 (1-133) x AAQ43109 (1-353)
                                                                                                                                                                                                        Disclosure; Fig 9a; 120pp; English.
                                                                             (COMM-) COMMON SERVICES AGENCY.
                                                                                                    Yap PL;
                                         91GB-0024696.
92GB-0013362.
                      92WO-GB02143.
                                                                                                                                                                                                                                                                                                                                                                                                                                 7.89e-64
583.00
97.44%
95.73%
                                                                                                     Simmonds P,
                                                                                                                         1993-182554/22
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Percent Similarity:
Best Local Similarity:
                                                                                                                                      P-PSDB; AAR37935.
                     20-NOV-1992;
                                          21-NOV-1991;
24-JUN-1992;
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27-MAY-1993
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AAV59361
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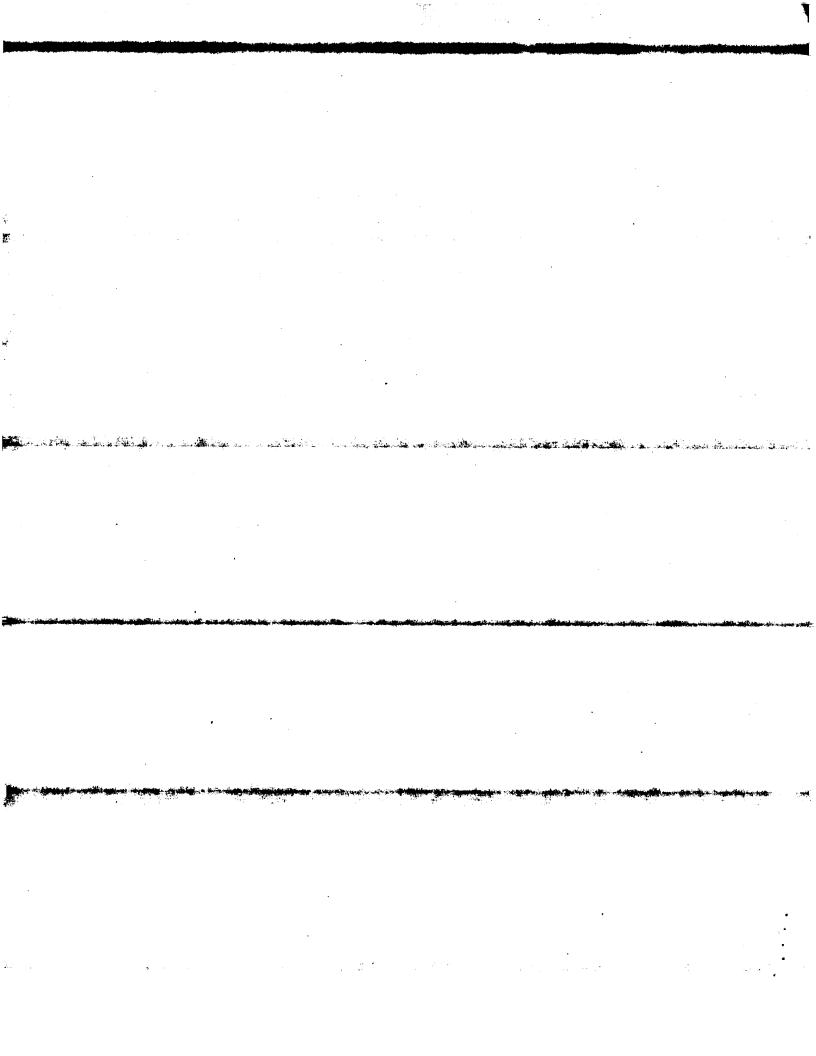
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New hepatitis C virus nucleic acid clones - comprising a 5'-terminal conserved sequence, an open reading frame encoding functional components and a 3'-terminal conserved sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         vectors, e.g. for gene therapy or gene vaccines. The products and wethods can also be used for identifying cell lines or animals that are permissive for infection with HCV, for studying HCV infection, isolating functional components of HCV, and for screening for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5' to 3' on the positive-sense nucleic acid, a functional 5' non-translated region (NTR) comprising an extreme 5'-terminal conserved sequence (see AAV5982), an open reading frame (ORF) encoding at least a portion of an HCV polyprotein whose cleavage products form functional components of HCV virus particles and RNA replication machinery, and a 3' NTR comprising an extreme 3'-terminal conserved sequence (see AAV59364), or a derivative selected from an adapted virus, live-attenuated virus, replication competent non infectious virus, and defective virus. The HCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H77 cDNA. It is a composite of sequenced clones isolated from a combinatorial library and a database sequence. A genetically engineered HCV nucleic acid clone is claimed which comprises, from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  in vivo.
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                                                                                                                                                                                                                                                                                                            /*tag= a
/note= "nucleotides 1-7 are conserved (Claim 7)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This is a nucleotide sequence of hepatitis C virus (HCV) isolate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             clones, or their derivatives, in therapeutic, vaccine and diagnostic applications. The invention is also directed to HCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag= c
/note= "nucleotides 9549-9646 are conserved
                                                                            HCV; therapy; diagnosis; vector; gene therapy; vaccine; ds.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 9646 BP; 1889 A; 2893 C; 2724 G; 2140 T; 0 other
                                                                                                                                                                                                                                                                                                                                                                                                                            /*tag= b
/product= HCV polyprotein
9378..9646
Hepatitis C virus H77 consensus seguence
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                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (Claim 8)"
                                                                                                                                                    Hepatitis C virus isolate H77.
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5'UTR
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Alignment Scores:

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Job time : 245 secs
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                                                                                                                                         80
                                                           20
                                                                                                                                                                                                                                                                                                                                                                              /product= "Hepatitis C virus consensus protein HCV H77"
/transl_except= (pos:9475..9477, aa:Glx)
/note= "This sequence lacks a stop codon"
                                                                                   GlnAsnGluIleCysLeuThrHisProIleThrLysTyrIleMetAlaCysMetSerAla
                                                                      AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
                                                                                                                                        ProAlalleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys
                                                                                                                                                                                                                                                                                                                  titis C virus; HCV; productive replication; infection; antiviral; consensus protein; gene; ss.
                                                                                                                                                                                                                                                                                                        consensus protein.
9646
101
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Conservative:
Mismatches:
Indels:
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 Length:
                                 Gaps:
                                            US-09-638-693-36 (1-133) x AAV59361 (1-9646)
                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
342..9477
/*tag= a
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                                                                                                                                                                                                                                                              ABK87285 standard; cDNA; 9646
2.28e-56
539.00
83.46%
75.94%
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kolykhalov AA;
             Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                       Hepatitis C virus,
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                                                                                                                                                                                                                                                                                                                                                                                                                                   04-MAR-1998;
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04-MAR-1997;
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                                                                                                                                                                                                                                                                                                                   Hepatitis
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                          Query Match:
Pred. No.:
                                                                                                                                                                                                                                                 RESULT 15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   101 ValLeuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaValIleGluProIleValThr 120
                                                                                                                                                                                                         The present invention relates to a new DNA or RNA comprising a hepatitis C virus (HCV) sequence capable of productive replication in a host cell. The molecules of the invention comprise 5 to 3 on the positive sense strand a functional HCV 5 non-translated region comprising an extreme 5'-terminal conserved sequence, an HCV polyprotein coding region and a functional HCV 3' non-translated region comprising an extreme 3'-terminal conserved region. The DNA or RNA Hs used to detect and develop treatment for infection by hepatitis C virus. The present nucleic acid sequence encodes the hepatitis C virus (HCV) H77
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region,
by
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                                                           New DNA or RNA comprising a hepatitis C virus sequence that and 5' non-translated regions flanking a polyprotein coding useful for detecting and developing treatment for infection
                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 9646 BP; 1889 A; 2893 C; 2724 G; 2140 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9646
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Mismatches:
Indels:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length:
Matches:
                                                                                                                                                                   Example 4; Column 65-74; 114pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-638-693-36 (1-133) x ABK87285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2.28e-56
539.00
83.46%
75.94%
77.11%
WPI; 2002-478540/51.
P-PSDB; AAU99289.
                                                                                                                         hepatitis C virus -
                                                                                                                                                                                                                                                                                                                                                                                                         consensus protein.
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Best Local Similarity:
Query Match:
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COMPOUR: IN PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0. Version #1.30
CURRENT APPLICATION DATA:
FILING DATE: 15-JUL-1994
CLASSIFICATION: 435
            US-08-867-611-15

PCT-US92-06965A-20

US-08-444-818-147

US-08-444-818-147

US-08-444-818-147

US-08-444-818-147

US-08-444-818-65

US-08-444-818-74

US-08-444-818-74

US-08-444-818-137

US-08-444-818-137

US-08-444-818-122

US-08-444-818-123

US-08-444-818-123

US-08-444-818-123

US-08-444-818-125

US-09-94-9

US-09-94-9

US-08-94-9

US-08-93-9

US-08-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: Bell, Seltzer, Park & Gibson, P.A. SFREET: 1211 East Morehead Street
CITY: Charlotte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Simmonds, Peter
APPLICANT: Chan, Shlu-Wan
APPLICANT: Tap, Peng L.
APPLICANT: Tap, Peng L.
NUMBER OF SEQUENCES: 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-08-444-818-13
US-08-483-695-6
US-07-965-285-6
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APPLICATION NUMBER: PCT/GB92/02143
FILING DATE: 20-NOV-1992
ATTONNEY/AGENT INFORMATION:
NAME: Sibley, Kenneth D.
REGISTRATION NUMBER: 31,665
REFERENCE/DOCKET NUMBER: 1749-125
TELECOMUNICATION INFORMATION:
TELEPHONE: 704-3377-1561
TELEFRONE: 704-3377-1561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 16, Application US/08244116B Patent No. 5763159
GENERAL INFORMATION:
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MEDIUM TYPE:
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-Q-CQ012_1/102PO_SP001/05096386931
-Q-CQ012_1/102PO_SP001/05096386931
-Q-CQ012_1/102PO_SP001/05096386931
-LIGSPEAS-DOOLOGOSP001/0509638693
-LOOPEXT-0 -UNITS-bits -START-1 -END--1 -MATRIX-blosum62 -TRANS-human40.cd1
-LIGST-45 -DOCALIGN-200 -THR_SCOREE-pct -THR_MAX-100 -THR_MIN-0 -ALIGN-15
-UOSE-LCOAL -COALIGN-200 -THR_SCORES-EDC4 -THR_MIN-0 -ALIGN-15
-UOSE-CAAL -OUTFMY-pto -NORM-ext -HEAPSIZE-500 -MINLEN-0 -MAXLEN-2000000000
-USER-US09638693_@CGN_11_156_@runat_25082003_173300_21671 -NCPU-6 -ICPU-3
-NO_MAAP -LARGEQUERY -NEG_SCORES-0 -WAIT -DSPBLOCK-100 -LONGLOG
-DBV_TIMEOUT-120 -WARN_TIMEOUT-30 -THREADS-1 -XGAPOP=10 -XGAPEXT-0.5 -FGAPOP=6
-FGAPOP=1 - YGAPOP=10 -YGAPEXT-0.5 -DELOP-6 -DELEXT-7
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Sequence 1, Appli
Sequence 5, Appli
Sequence 43, Appli
Sequence 43, Appli
Sequence 43, Appli
Sequence 43, Appli
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1012.137 Million cell updates/sec
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                                                                                                                                        August 29, 2003, 11:25:30 ; Search time 58 Seconds
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/cgn2_6/ptodata/2/ina/5B_COMB.seq:*
/cgn2_6/ptodata/2/ina/6A_COMB.seq:*
/cgn2_6/ptodata/2/ina/6B_COMB.seq:*
/cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
/cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
                   GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                                                               OM protein - nucleic search, using frame_plus_p2n model
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US-09-034-756-1
US-09-034-756-5
US-09-034-756-5
US-08-483-695-43
US-07-965-285-43
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US-08-867-611-51
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Ygappp 10.0, Ygapext
Fgappp 6.0, Fgapext
Delop 6.0, Delext
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Maximum Match 1008
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Maximum DB seq length: 200000000
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Match
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Perfect score:
Sequence:
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Database :

Result

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RESULT 3
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                                                                                                                                                                                                                                                                                         28 ThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeuSerValGly
                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Rice, Charles et al.
TITLE OF INVENTION: FUNCTIONAL DNA CLONE FOR HEPATITIS C
TITLE OF INVENTION: FUNCS (HCV) AND USES THEREOF
NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
ADDRESSE: David A. Jackson, Esq.
STREET: 411 Hackensack Ave, Continental Plaza, 4th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/811,566
FILING DATE: 03-MAR-1997
CLASSIFICATION: 435
                                                                                                                                                                             Length:
Matches:
Conservative:
Mismatches:
Indels:
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; Patent No. 6127116
                                                                                                                              Hepatitis-C virus
     16:
                                                                                                                                                                              1.26e-61
572.00
94.87%
94.87%
81.83%
INFORMATION FOR SEQ ID NO: 1 SEQUENCE CHARACTERISTICS: LENGTH: 367 base pairs TYPE: nucleic acid STRANDEDNESS: double TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 07601
COMPUTER READABLE FORM:
                                                            IOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ANTI-CENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Hackensack
STATE: New Jersey
COUNTRY: USA
                                                                                                                                                                                                      Percent Similarity:
Best Local Similarity:
                                                                                                    ANTI-SENSE: NO
ORIGINAL SOURCE:
ORGANISM: Hepa
                                                                                                                                        US-08-244-116B-16
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CITY: H
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     21 AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla
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Patent No. 6392028
GENERAL INFORMATION:
APPLICANT: RICE, CHARLES et al.
TITLE OF INVENTION: FUNCTIONAL DNA CLONE FOR HEPATITIS C
                                                                                                                                                                                                                                                                                                                              9646
101
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22
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ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-09-638-693-36 (1-133) x US-08-811-566-1 (1-9646)
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                                                                                                                                                                                                                                                                                                                              Length:
Matches:
                                                                                                                                                                                                                                                                                                                                                                                                 Indels:
                                                  1113-1-006
            NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1113-
TELECOMMUNICATION INFORMATION:
TELEPRONE: 201-487-5800
TELEFAX: 201-343-1684
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                             1.11e-55
539.00
83.46%
75.94%
77.11%
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                      LENGTH: 9646 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
TOPOLOGY: linear
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ZIP: 63105
COMPUTER READABLE FORM:
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STATE: MO
                                                                                                                                                                                                                          MOLECULE TYPE: CDNA
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Query Match:
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US-08-811-566-1
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5535 GCCCTCGGCCTCCTGCAGACCGCGTCCCGCCAAGCAGGTTATCACCCCTGCTGTCAG 5594
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: David A. Jackson, Esq.
STREET: 411 Hackensack Ave, Continental Plaza, 4th
STREET: Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5595 accaactggcagaactcgaggtcttctggggggaagcac 5633
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                                                                                                                                                                                          OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/811,566
FILING DATE: 03-MAR-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-638-693-36 (1-133) x US-08-811-566-5 (1-12980)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels:
                                                                                                                                                                                                                                                                                                                    NAME: Jackson Esq., David A.
REGISTRATION NUMBER: 26,742
REFERENCE/DOCKET NUMBER: 1113-1-006
TELECHONE: 201-487-5800
TELEPRA: 201-487-5800
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length:
                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
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539.00
83.46%
75.94%
                                                                                                                                                                                                                                                                    FILING DATE: 03-MAR-1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 12980 base pairs TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          double
                    CORRESPONDENCE ADDRESS: ADDRESSE: David A.
                                                                                                                                    ZIP: 07601
COMPUTER READABLE FORM:
                                                                                    CITY: Hackensack
STATE: New Jersey
COUNTRY: USA
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Best Local Similarity:
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MOLECULE TYPE: CD
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                                                                                                     STATE: Ne
COUNTRY:
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                                                                     STREET:
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Patent No. 6127116
GENERAL INFORMATION:
APPLICANT: RICE, Charles et al.
TITLE OF INVENTION: FUNCTIONAL DNA CLONE FOR HEPATITIS C
TITLE OF INVENTION: VIRUS (HCV) AND USES THEREOF
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/034,756
FILING DATE: 04-May-1998
CLASSIFICATION: <UNknown>
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101
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Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 6029-4831
TELECOMMUNICATION INFORMATION:
TELEPHONE: 314-727-5188
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE DESCRIPTION: SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                     LENGTH: 9646 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.11e-55
539.00
83.46%
75.94%
                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear MOLECULE TYPE: cDNA
                                                                                                                                                                                                                                                                                                                                                                        HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                      ANTI-SENSE: NO
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Best Local Similari
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US-08-811-566-5
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Sequence 43, Application US/08483695
Patent No. 5866139
GENERAL INFORMATION:
APPLICANT: Brechot, Christian
APPLICANT: Forchon, Colette
TITLE OF INVENTION: Hepatitis C Virus Isolate, Diagnostic and Therapeutic
TITLE OF INVENTION: Applications
NUMBER OF SEQUENCES: 46
CORRESPONDENCE ADDRESS:
ADDRESSEE: Finnegan, Henderson, Farabow, Garrett &
ADDRESSEE: Pinnegan, Henderson, Farabow, Garrett &
ADDRESSEE: Dunner
                                                             5535 GCCTCGGCCTCCTGCAGACCGCGTCCCGCCAAGCAAGGTATCACCCCTGCTGTCCAG 5594
5475 TCTCAGCACTTACCGTACATCGAGCAAGGGATGATGCTCGCTGAGCAGTTCAAGCAGAAG 5534
                                        101 ValLeuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaValIleGluProIleValThr 120
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                                                                                                                                             121 ThrAsnTrpGlnLysLeuGluAlaPheTrpHisLysHis 133
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,695
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative:
Mismatches:
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APPLICATION NUMBER: US/07/965,285
FILING DATE: 18-MAR-1993
APPLICATION NUMBER: FR 91 06 882
FILING DATE: 06-UN-1991
ATTORNEY/AGENT INFORMATION:
NAME: Meyers, Kenneth J.
REGISTATION NUMBER: 25,146
REGISTATION NUMBER: 25,146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA to genomic RNA
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TELECOMMUNICATION INFORMATION
TELEPHONE: 202-408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STATE: DC
COUNTRY: USA
ZIP: 20006-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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83.46%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH: 943 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 202-408-4400 INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
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Best Local Similarity:
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DESCRIPTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys 60
                                                                                                         APPLICANT: FICE, CHARLES et al.
APPLICANT: FICE, CHARLES et al.
TITLE OF INVENTION: FUNCTIONAL DNA CLONE FOR HEPATITIS C
VIRUS (HCV) AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                         COMPUTER: FLOPPY disk
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPUTER: DATE OF DES/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/034,756
FTLING DATE: US/04/04998
CLASSIFICATION: <UNKNOWN>
ATTORNEY AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 6029-4831
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
                                                                                                                                                                         NUMBER OF SEQUENCES: 100 CORRESPONDENCE ADDRESS:
ADDRESSE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
CITY: ST. LOUIS
STATE: MO
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-638-693-36 (1-133) x US-09-034-756-5 (1-12980)
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Gaps:
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; SEQUENCE DESCRIPTION: SEQ ID NO: 5:
US-09-034-756-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
TELEPHONE: 314-727-5188
TELEFAX: 314-727-6092
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 12980 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                    Sequence 5, Application US/09034756
Patent No. 6392028
GENERAL INFORMATION:
APPLICANT: RICE, CHARLES et
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.65e-55
539.00
83.46%
75.94%
77.11%
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COMPUTER READABLE FORM:
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Best Local Similarity:
Query Match:
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Pred. No.:
              RESULT 5
US-09-034-756-5
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APPLICANT: Porchon, Colette
TITLE OF INVENTION: Mucleotide and Peptide Sequences of a
TITLE OF INVENTION: Hepatitis C Virus Isolate, Diagnostic and Therapeutic
TITLE OF INVENTION: Applications
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                                                                                                                                                                                                                                                                                                                                                                                  713
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      714 CCGGCAATCATACCTGACAGGGAAGTCCTCTACCGAGAGTTCGATGGAAGAGTGC 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SerGlnAlaAlaProTyr1leGluGlnAlaGlnVal11eAlaHisGlnPheLySGlyLys 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              101 ValLeuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaValIleGluProIleValThr 120
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                                                                                                                                                                                                                                                                                                                                                                                                                     774 TCTCAGCACTTACCGTACATCGAGCAAGGGATGATGCTCGCCGAGCAGTTCAAGCAGAAG
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Finnegan, Henderson, Farabow, Garrett
ADDRESSEE: Dunner
STREET: 1300 I Street, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25
                                                 Length:
Matches:
Conservative:
                                                                                                                                                                        US-09-638-693-36 (1-133) x US-07-965-285-43 (1-943)
                                                                                                    Mismatches:
Indels:
                                                                                                                                          Gaps:
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APPLICATION NUMBER: US 07/965,285
FILING DATE: 18-MAR-1993
CLASSIFRCATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CUCRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/487,231
FILING DATE: 07-UUME-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 43, Application US/08487231 Patent No. 5919454 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Christian
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                 534.00
83.468
74.448
76.398
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OPERATING SYSTEM:
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                                                                                                      Best Local Similarity:
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                                                                                  Percent Similarity
                                  Alignment Scores:
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JS-07-965-285-43
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No.:
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APPLICANT: Kremsdorf, Dina
APPLICANT: Kremsdorf, Dina
APPLICANT: Porchon, Colette
TITLE OF INVENTION: Nucleotide and Peptide Sequences of a
TITLE OF INVENTION: Hepatitis C Virus Isolate, Diagnostic and Therapeutic
TITLE OF INVENTION: Applications
NUMBER OF SEQUENCES: 46
CORRESPONDENCE ADDRESS:
                                                                                                101 ValLeuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaValIleGluProIleValThr 120
                                                                                                                                                                                                                                                                                                                               SerGlnAlaAlaProTyrIleGluGlnAlaGlnValIleAlaHisGlnPheLysGlyLys 100
653
                                                                                                                                                                                                                                                                          774 TCTCAGCACTTACCGTACATCGAGCAAGGGATGATGCTCGCCGAGCAGTTCAAGCAGAAG 833
                                                                                                                                                                        80
                                21 AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla 40
                                                    ProAlaIleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys
                                                                                                                                                                                                                                                                                                                                                                                                    ThrAsnTrpGlnLysLeuGluAlaPheTrpHisLysHis 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: Finnegan, Henderson, Farabow, Garrett
ADDRESSEE: Dunner
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/07/965,285
FILING DATE: 18-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05286-0001-00000
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MOLECULE TYPE: Other
DESCRIPTION: CDNA to genomic RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 06 882
FILING DATE: 06-JUN-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-07-965-285-43
; Sequence 43, Application US/07965285
; Patent No. 5879904
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: Meyers, Kenneth J.
REGISTRATION NUMBER: 25,146
REFERENCE/DOCKET NUMBER: 05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  : 1300 I Street, N.W. Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INFORMATION FOR SEQ ID NO: 43: SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 943 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              202-408-4400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: Z0005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         USA
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                                                                                                                                                                                                                                                                                                                                                                                  121
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us-09-638-693-36.rni

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COUNTRY:
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APPLICANT: Brechot, Christian
APPLICANT: Brechot, Christian
APPLICANT: Kremsdorf, Dina
APPLICANT: Forchon, Collette
TILE OF INVENTION: Nucleotide and Peptide Sequences of a
TILE OF INVENTION: Hepatitis C Virus Isolate, Diagnostic and Therapeutic
TITLE OF INVENTION: Applications
NUMBER OF SEQUENCES: 46
CORRESPONDENCE ADDRESS:
ADDRESSEE: Finnegan, Henderson, Farabow, Garrett &
                                                                                                                                                                                                                                                                                                                                                                                       713
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Matches:
Conservative:
Mismatches:
Indels:
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                                                                              05286-0001-02000
                                                                                                                                                                                                                                                                                                                                          Gaps:
                                                                                                                                                                                                       MOLECULE TYPE: Other DESCRIPTION: CDNA to genomic RNA
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; Sequence 43, Application US/09201912
; Patent No. 6210962
                                                NAME: Meyers, Kenneth J.
REGISTRATION NUMBER: 25,146
REFERENCE/DOCKET NUMBER: 052046
TELECOMMULICATION INFORMATION:
TELEFRAX: 202-408-4000
INFORMATION FOR SEQ ID NO: 43:
SEQUENCE CHARACTERISTICS:
LENGTH: 943 base pairs
PRIOR APPLICATION DATA:
APPLICATION NUMBER: FR 91 06
FILING DATE: 06-JUN-1991
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                       2.03e-56
534.00
83.46%
74.44%
76.39%
                                                                                                                                                                    TYPE: nucleic acid
STRANDEDNESS: single
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                                                                                                COMPUTER: IBM PC Compatible
COMPUTER: PACE POSTING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/201,912
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Conservative:
Mismatches:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-09-638-693-36 (1-133) x US-09-201-912-43 (1-943)
                                                                                                                                                                                                                                                             NAME: Meyers, Kenneth J.
RECISTRATION NUMBER: 25,146
REFERENCE-TOCKET NUMBER: 05286-0001-00000
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-408-4000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length:
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                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/965,285
FILING DATE:
: 1300 I Street, N.W. Washington
                                                                                                                                                                                                                                                                                                                                    TELEFAX: 202-408-4400 INFORMATION FOR SEQ ID NO: 43:
                                                    ZIP: 20005-3315
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        534.00
83.46%
74.44%
76.39%
                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 943 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS: single
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                                          USA
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                                                                                                                                                                          FILING DATE
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81 SerGlnAlaAlaProTyrIleGluGlnAlaGlnValIleAlaHisGlnPheLysGlyLys 100
                                                                                101 ValLeuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaValIleGluProIleValThr 120
                                                                                                     532 GCCCTCGGCCTCCTGCAGACCGCGTCCCGTCAGGCAGGTTATCGCCCTGCTGTCCAG 591
                                  Sequence 19, Application US/08444818
Patent No. 6150087
GENERAL INFORMATION
APPLICANT: Chien, David Y.
TITLE OF INVENTION: NANBV Diagnostics and Vaccines
NUMBER OF SEQUENCES: 777
CORRESPONDENCE ADDRESS:
ADDRESSE: Chiron Corporation
STREET: AF60 Horton Street
CITY: Emeryville
                                                                                                                                              SPETWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/444,818
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Mismatches:
Indels:
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Matches:
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/403,590
FILING DATE: 14-WAR-1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0110.002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READBALE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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REGISTRATION NUMBER: 33,895
REFERENCE/DOCKET UNBER: 0.11
TELECOMMUNICATION INFORMATION:
TELEPHONE: (508)359-3876
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83.46%
74.44%
76.39%
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INFORMATION FOR SEQ ID NO:
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Best Local Similarity:
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MOLECULE TYPE:
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        Sequence 67, Application US/08444818
Patent No. 6150087
GENERAL INFORMATION:
APPLICANT: Chien, David Y.
TITLE OF INVENTION: NAMBV Diagnostics and Vaccines
ITMLE OF INVENTION: NAMBV Diagnostics and Vaccines
NUMBER OF SEQUENCES: 77
CORRESPONDENCE ADDRESS:
ADDRESSEE: Chiron Corporation
STREET: Emeryville
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1310
99
12
22
0
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/444,818
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Mismatches:
Indels:
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Matches:
                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION UNBER: US/08/403,590
FILING DATE: 14-YAR-1995
ATTORNEY/AGENT INFORMATION:
NAME: HArbin, Alisa A.
REGISTRATION NUMBER: 33,895
REFERENCE/DOCKET NUMBER: 0110.002
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: (508)359-3876
TELEFAX: (508)359-3885
INFORMATION FOR SEQ ID NO: 67: SEQUENCE CHARACTERISTICS:
LENGTH: 1310 base pairs
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EDNESS: single
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Query Match:
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US-08-444-818-67
US-08-444-818-67
                                                                                                                                                                                                               COUNTRY:
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APPLICANT:
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                                                          9
AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla
             AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
                                                                       SerGlnAlaAlaProTyrIleGluGlnAlaGlnValIleAlaHisGlnPheLysGlyLys
                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: DEVARE, SUSHIL G
APPLICANT: DESAL, SURESH M
APPLICANT: DESAL, SURESH M
APPLICANT: DAILEY, STEPHEN H
APPLICANT: DAILEY, STEPHEN H
APPLICANT: DAILEY, STEPHEN H
APPLICANT: DAILEY, STEPHEN H
APPLICANT: LESNIEWSKI, RICHARD R
APPLICANT: RUPPRECHT, VEVINN R
TITLE OF INVENTION: ANTIGENS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE SIS
                                                                                                                                                                                                                                                                                   121 ThrAsnTrpGlnLysLeuGluAlaPheTrpHisLysHis 133
                                                                                                                                                                                                                                                                                                                  844 ACCAACTGGCAAAACTCGAGACCTTCTGGGCGAAGCAT 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISH PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAD377/AP6D2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/572,822
FILING DATE: 24-AUG-1990
PRIOR APPLICATION DATA:
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FILING DATE: 07-NOV-1990
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FILING DATE: 21-AUG-1991
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FILING DATE: 02-JUN-1997
CLASSIFICATION: 435
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: IL
                                                                                                                                                                                                                                                                                                                                                                       Sequence 51, Application US/08867611
Patent No. 6172189
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ZIP: 60064-3500
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Mismatches:
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PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 07 ""
FILLING DATE:
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                                                                                                                 NAME: POREMBSKI, PRISCILLA E
REGISTRATION UNDMBER: 33.207
REFERENCE/DOCKET UNMBER: 4834
TELECOMMUNICATION INFORMATION:
TELEPHONE: 708.937-6355
INFORMATION FOR SEQ ID NO: 51:
SEQUENCE CHARACTERISTICS:
LEWGTH: 1414 base pairs
TYPE: nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LESNIEWSKI, RICHARD
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DESAL, SURESH M
CASEY, JAMES M
DAILEY, STEPHEN H
DAWSON, GEORGE J
GUTIERREZ, ROBIN A
                                                                                                                                                                                                                                                                                                                           DNA (genomic)
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534.00
83.46%
74.44%
                                                                                    FILING DATE: 21-AUG-1991 ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                        TYPE: nucleic STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                          Percent Similarity:
                                                                                                                                                                                                                                                                                                           TOPOLOGY:
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APPLICANT:
APPLICANT:
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RUPPRECHT, KEVIN

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513 GCTTACTGCCTGTCGACCGGTTGCGTTGTTATCGTTGGTCGTGGTTGTTCTTGTCTGTTGGTAAA 672
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                                                                                                                                                                                   101 ValLeuGlyLeuLeuGlnArgAlaThrGlnGlnGlnAlaValIleGluProIleValThr 120
                                                                                                                                                                                                                                                                                  793 GCTCTGGGTCTGCTGCAGACCGCTTCTCGTCAGGCTGAAGTTATCGCTCCGGCTGTTCAG 852
        9
        41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: DEVARE, SUSHIL G
APPLICANT: DEVARE, SURBERH M
APPLICANT: CASEX, JAMES M
APPLICANT: CASEX, JAMES M
APPLICANT: DALLEY, STEPHEN H
APPLICANT: DAWSON, GEORGE J
APPLICANT: GUTLERREZ, ROBIN A
APPLICANT: GUTLERREZ, ROBIN A
APPLICANT: STEWARY, JAMES L
APPLICANT: RUPPRECHT, KEVIN R
TITLE OF INVENTION: HEPATITIS C ASSAY UTILIZING RECOMBINANT
TITLE OF INVENTION: ANTIGENS
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                         121 ThrAsnTrpGlnLysLeuGluAlaPheTrpHisLysHis 133
                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/867,611
FILING DATE: 02-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEE: ABBOTT LABORATORIES
: ONE ABBOTT PARK ROAD, CHAD377/AP6D2
ABBOTT PARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PAPLICATION NUMBER: US 07/748,561
FILING DATE: 21-AUG-1991
APPLICATION DATA:
APPLICATION NUMBER: US 07/748,565
FILING DATE: 21-AUG-1991
PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: US 07/748,566
FILING DATE: 21-AUG-1991
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 60064-3500
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 15, Application US/08867611 Patent No. 6172189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 24-AUG-1990
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07
FILING DATE: 07-NOV-1990
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US 07
FTT, TNG DATE: 24-AUG-1990
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
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STATE:
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ZIP: 60064-3500

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/867,611
FILING DATE: 02-JUN-1997
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length:
Matches:
Conservative:
Mismatches:
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                                                                      ADDRESSEE: ABBOTT LABORATORIES
STREET: ONE ABBOTT PARK ROAD, CHAD377/AP6D2
CITY: ABBOTT PARK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US 07/748,566
FILING DATE: 21-AUG-1991
ATTONNEY,FAGENT INFORMATION:
NAME: POREMBSKI, PRISCILLA E
REGISTRATION NUMBER: 33,207
FELECOMMUNICATION INFORMATION:
TELEPHONE: 708-937-6365
                                                                                                                                                                                                                                                                                                                                                                                                              FILING DATE:
APPLICATION NUMBER: US/08/179,896
FILING DATE:
APPLICATION NUMBER: US/08/179,896
FILING DATE: 24-AUG-1990
PRIOR APPLICATION NUMBER: US 07/572,822
FILING DATE: 07-NOV-1990
PRIOR APPLICATION NUMBER: US 07/748,561
FILING DATE: 21-AUG-1991
PRIOR APPLICATION NUMBER: US 07/748,561
FILING DATE: 21-AUG-1991
PRIOR APPLICATION NUMBER: US 07/748,565
FILING DATE: 21-AUG-1991
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                      ANTIGENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; MOLECULE TYPE: DNA (genomic) US-08-867-611-57
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534.00
83.46%
74.44%
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STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
                                       NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
    INVENTION:
TITLE OF INVENTION:
TITLE OF INVENTION:
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Best Local Similarity:
Query Match:
                                                                                                                                                            USA
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GENERAL INFORMATION:
APPLICANT: DEVARE, S.
APPLICANT: DAILEY, S.
TITLE OF INVENTION: HCV SYNTHETIC PEPTIDE FROM NSI REGION NUMBER OF SEQUENCES: 35
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                        1791
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Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                                                                                                                                                                                                                                                               US-09-638-693-36 (1-133) x US-08-867-611-15 (1-1791)
        NAME: POREMBSKI, PRISCILLA E
REGISTRATION NUMBER: 33,207
REFERENCE/DOCKET NUMBER: 4834.US.P6
TELECOMUNICATION INFORMATION:
TELEPHONE: 708-937-6365
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 1791 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: ABBOTT LABORATORIES
STREET: ONE ABBOTT PARK ROAD
CITY: ABBOTT PARK
STATE: ILLINOIS
COUNTRY: U.S.
                                                                                                           LENGTH: 1791 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLOGY: circular
MOLECULE TYPE: DNA (genomic)
                                                                                                                                                                                                                                                         4.79e-56
534.00
83.46%
74.44%
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                 Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                                                                          ; NAME/KEY: CDS
; LOCATION: 1..1
US-08-867-611-15
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1162 GCTCTGGGTCTGCTGCAGACCGCTTCTCGTCAGGCTGAAGTTATCGCTCCGGCTGTTCAG 1221
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/06965A
FILING DATE: 19920821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-638-693-36 (1-133) x PCT-US92-06965A-20 (1-1791)
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Conservative:
Mismatches:
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NAME: POREMBSKI, PRISCILLA E.
REGISTATION UNUABER: 33,207
REFERENCE/DOCKET NUMBER: 4834PC.02
TELECOMMUNICATION INFORMATION:
TELEPHONE: 708-937-9556
INFORMATION FOR SEQ ID NO: 20:
SEQUENCE CHARACTERISTICS:
LENGTH: 1791 base pairs
TYPE: NUCLEIC AGID
STRANDEDNESS: single
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Job time : 66 secs
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83.46%
74.44%
76.39%
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LOCATION: 1..1791
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Best Local Similarity:
                                                                                                                                       FILING DATE: 1 CLASSIFICATION:
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Sequence 222, App
Sequence 31, Appl
Sequence 31, Appl
Sequence 31, Appl
Sequence 33, Appl
Sequence 1, Appl
Sequence 1, Appl
Sequence 1, Appl
Sequence 5, Appl
Sequence 5, Appl
Sequence 5, Appl
Sequence 5, Appl
Sequence 19, Appl
Sequence 11, Appl
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Sequence 8, Appli
Sequence 15, Appl
Sequence 41, Appl
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Sequence 7,
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/899,046
FILING DATE:
US-09-878-281-35
US-09-899-046-37
US-09-878-281-37
US-09-878-281-39
US-09-878-281-39
US-09-878-281-39
US-09-899-046-222
US-09-899-046-31
US-09-899-046-31
US-09-8778-281-33
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US-10-104-966-13
US-10-259-275-17
US-09-919-901-18
US-09-919-901-18
US-09-919-901-18
US-10-259-275-415
US-10-005-469-1
US-10-005-469-2
US-10-005-469-2
US-10-005-469-3
US-10-005-469-3
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US-10-029-907-1
US-10-309-561-5
US-10-029-907-5
US-10-259-275-39
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US-09-995-937-1
US-09-917-563-1
US-09-995-937-5
US-09-917-563-5
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US-09-995-937-19
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APPLICATION NUMBER: 08/362,455
    SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
TYPE: nucleic acid
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TITLE OF INVENTION: New
TITLE OF INVENTION: 9eno
NUMBER OF SEQUENCE: 270
COMPUTER READABLE FORM:
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INFORMATION FOR SEQ ID NO:
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  STRANDEDNESS:
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                              -MODEL-frame+_p2n.model -DEV-x1h
-Q-CQG02_1/126/app_query.fasta_1.327
-Q-CQG02_1/128FQ_spool/US09638693/runat_25082003_173300_21726/app_query.fasta_1.327
-Q-CQG02_1/128FQ_spool/US09638693/runat_25082003_173300_21726/app_query.fasta_1.327
-LDB-Published_Applications_NA -QFMT-fastap -SUFFIX-rnpb -MINMATCH-0.1
-LOOPCL-0 -LOOPEXT-0 -UNITS-bits -START-1 -END-1 -MATRIX-blosum62
-TRANS-humand40.cdi _LIST-45 -DOCALIGN-200 -THR_SCORE-pct -THR_MAX-100
-MAXLEN-200000000 -USER-US09638693_CGN_1_1_221_€runat_25682003_173300_21726
-NCPU-6 -LCDN-3 -NO_WAAP -LARGEQUERY -NG_SCORES-0 -WAIT -DSPBLCCK-100
-NCPU-6 -LCDN-1 -NO_WAAP -LARGEQUERY -NG_SCORES-0 -WAIT -DSPBLCCK-100
-LONGLOG -DEV_TIMEOUT-120 -WARN_TIMEOUT-30 -THRABS-1 -XGAPEXT-0.5
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1412.664 Million cell updates/sec
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                                                                                                                                                                  1 ONEICLTHPITKYIMACMSA......VIEPIVTTNWQKLEAFWHKH 133
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/cgn2_6/ptodata/2/pubpna/US09C_PUBCOMB.seq:*
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/cgn2_6/ptodata/2/pubpna/US60_NEW_PUB.seq:*
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/cgn2_6/ptodata/2/pubpna/PCT_NEW_PUB.seq:*
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/cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
/cgn2_6/ptodata/2/pubpna/US08_NEW_PUB.seq:*
            GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
                                                              nucleic search, using frame_plus_p2n model
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Published_Applications_NA:*
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0.5
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Xgapop 10.0, Xgapext
Ygapop 10.0, Ygapext
Fgapop 6.0, Fgapext
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Maximum DB seq length: 200000000
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Perfect score:
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STRANDEDNESS: single
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US-09-878-281-35
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy,
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                               401
133
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SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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Mismatches:
Indels:
                                                                                                                                                                                                                                                       US-09-638-693-36 (1-133) x US-09-899-046-35 (1-401)
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Matches:
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Publication No. US20030032005A1
GENERAL INFORMATION:
APPLICANT:
TITLE OF INVENTION: genotypes for d
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDLUM TYPE: Floppy disk
COMPUTER: IBM PC COMpatible
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FILING DATE:
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699.00
100.00%
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SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
TYPE: nucleic acid
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APPLICATION NUMBER: (
TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
IMMEDIATE SOURCE:
CLONE: 'BR36-20-164
                                                                                           NAME/KEY: CDS
LOCATION: 3..401
                                                                                                                                                                                     Percent Similarity:
Best Local Similarity:
Query Match:
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                                                                                                                                                  Alignment Scores:
                                                                                                                       US-09-899-046-35
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US-09-878-281-35
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
SOFTWART: Patentin Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
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Mismatches:
Indels:
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Matches:
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APPLICATION NUMBER: 08/362,455
FILING DATE:
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                                                                IMMEDIATE SOURCE:
CLONE: BR36-20-164
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Best Local Similarity:
Query Match:
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TOPOLOGY: line
MOLECULE TYPE: C
HYPOTHETICAL: NC
ANTI-SENSE: NO
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NAME/KEY:
LOCATION:
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25 (EPO)
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Matches:
Conservative:
Mismatches:
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; Publication No. US20030008274A1
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           STRANDEDNESS: single
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nucleic acid
                                                                                    CLONE: BR36-20-166
                     TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
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Best Local Similarity:
                                                           ANTI-SENSE: NO
IMMEDIATE SOURCE:
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LOCATION: 3...
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COMPUTER READABLE FORM:
COMPUTER: IBP PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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Mismatches:
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Matches:
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                                                                                                                                                                                                                                                                      1.76e-90
691.00
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TYPE: 401 base pairs TYPE: nucleic acid STRANDEDNESS: single TOPOLOGY: line 100.
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                                                                                  MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
IMMEDIATE SOURCE:
CLONE: BR36-20-165
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Best Local Similarity:
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APPLICANT:
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INFORMATION FOR SEQ ID NO:
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COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25 (EPO)
CURRENT APPLICATION DATA:
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Mismatches:
Indels:
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Matches:
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
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691.00
99.25%
99.85%
SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLLGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
                                                                                             IMMEDIATE SOURCE:
CLONE: BR36-20-166
                                                                                                                                                                                                              Percent Similarity:
Best Local Similarity:
Query Match:
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; LOCATION: 3..4
US-09-878-281-37
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TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 ProAlaIleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys
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APPLICATION NUMBER: US/09/899,046
FILING DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
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Mismatches:
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Matches:
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691.00
99.25%
99.86%
          SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                    TOPOLOGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
ANTI-SENSE: NO
IMMEDIATE SOURCE:
CLONE: BR36-20-165
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OPERATING SYSTEM:
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Best Local Similarity:
Query Match:
DB:
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*** APPLICANT:

*** TITLE OF INVENTION: General of hepatitis C virus

*** TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.

*** NUMBER OF SEQUENCES: 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GlnAsnGlulleCysLeuThrHisProlleThrLysTyrIleMetAlaCysMetSerAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             231 CAAAATGAAATCTGCTTGACACCCCCATCACAAAATACATCATGGCATGTCAGCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21 AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 ProAlaIleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      411 CCGGCAATCGTTCCAGACAAAGAGGTGTTGTATCAACAATACGATGAGAAGAGTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
                                                                                                                                                                                                                                                                                                                629
132
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Mismatches:
Indels:
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                                                                                                                                                                                                                                                                                                                Length:
Matches:
                   08/362,455
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                              691.00
99.25%
99.25%
98.86%
                                                                          LENGTH: 629 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION DATA:
                                                               SEQUENCE CHARACTERISTICS:
                                               INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                        mat_peptide 3..629
   PRIOR APPLICATION DATA:
APPLICATION NUMBER: (FILING DATE:
                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                      TOPOLOGY: linea MOLECULE TYPE: CF HYPOTHETICAL: NO
                                                                                                                                                                    ANTI-SENSE: NO
                                                                                                                                                                                                                                        NAME/KEY:
LOCATION:
                                                                                                                                                                                                                                                                       US-09-878-281-222
                                                                                                                                                                               FEATURE:
NAME/KEY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                 1 GlnAsnGluIleCysLeuThrHisProIleThrLysTyrIleMetAlaCysMetSerAla
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SOFTWARE: Patentin Release #1.0, Version #1.25
SOFTWARE: PAPLICATION DATA:
APPLICATION NUMBER: US/09/878,281
FILING DATE:
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Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                                                                                                                                                                3.37e-90
691.00.
99.25%
99.25%
FILING DATE:
INFORMATION FOR ESO ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 629 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
TOPOLLGY: linear
MOLECULE TYPE: CDNA
HYPOTHETICAL: NO
                                                                                                                                                                                                        NAME/KEY: mat_peptide
LOCATION: 3..629
                                                                                                                                                                                3..629
                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
Query Match:
                                                                                                                                 ANTI-SENSE: NO FEATURE:
                                                                                                                                                               NAME/KEY:
LOCATION:
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US-09-899-046-222
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US-09-878-281-222
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 33, Application US/09899046; Publication No. US20030008274A1

Sequence 33, Application US/09899046; Publication No. US20030008274A1

GENERAL INFORMATION:
APPLICANT:
TITLE OF INVENTION: Genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25 (EPO)
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Matches:
Conservative:
Mismatches:
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  US/09/899,046
                                       PRIOR AND CALLON DATA:
APPLICATION NUMBER: 08/362,455
FILING DATE:
INFORMATION FOR SEQ ID NO: 31:
SEQUENCE CHARACTERISTICS:
LENGTH: 401 Dase pairs
TYPE: nucleic acid
STRÂNDEDNESS: single
TYPE: nucleic acid
STRÂNDEDNESS: single
TYPE: All and All a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9.85e-88
672.00
97.74%
93.23%
96.14%
APPLICATION NUMBER:
FILING DATE:
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IMMEDIATE SOURCE:
CLONE: HD10-1-25
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Best Local Similarity:
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US-09-899-046-31
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Pred. No.:
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63 GATCTGGAAGTAACCACCAGCACCTGGGTGTTGGAGGGGTCCTCGCGGCCCTAGCG 122
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy.
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ProAlaIleValProAspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21 AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAla
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           183 CCGGCACTCGTTCCAGACAAGGAGGTGTTGTATCAACAGTACGATGAGATGGAGGAGTGC
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124
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Matches:
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               US/09/899,046
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Sequence 31, Application US/09878281
Publication No. US20030032005A1
GENERAL INFORMATION:
APPLICANT:
                                             PRIOR APPLICATION DATA: APPLICATION NUMBER: 08/362,455
                                                                                                                                                                                                                                                                                                                                                                                    9.85e-88
672.00
97.74%
93.23%
96.14%
                                                                              FILING DATE:
INFORMATION FOR SEQ ID NO: 3
SEQUENCE CHARACTERISTICS:
LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
CURRENT APPLICATION DATA
               APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                MOLECULE TYPE: CDNA HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                    linear
                                                                                                                                                                                                                                ANTI-SENSE: NO
IMMEDIATE SOURCE:
CLONE: HD10-1-3
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LOCATION:
US-09-899-046-33
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DB:
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SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25
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Ingravallo, Paul
Wright-Minogue, Jacquelyn
Lau, Johnson Y.
                                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 3, Application US/09742659; Patent No. US20010034019A1; GENERAL INFORMATION:
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672.00
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Butkiewicz, Nancy
                                                                                                                             LENGTH: 401 base pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                      INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                          CURRENT APPLICATION DATA
                                                                                                                                                                           linear
                                                                                                                                                                                                                                                                                                                                                           Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                          CLONE: HD10-1-3
                                                                                                                                                                                    MOLECULE TYPE: CI
HYPOTHETICAL: NO
ANTI-SENSE: NO
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                                                                                                                                                                                                                                                                    NAME/KEY: CDS
                                                                                            FILING DATE:
                                                       FILING DATE:
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US-09-878-281-33
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         101 ValLeuGlyLeuLeuGinArgAlaThrGlnGlnGlnAlaValIleGluProIleValThr 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       41 AlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGluLeuGlyGlyLys
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: New sequences of hepatitis C virus
TITLE OF INVENTION: genotypes for diagnosis, prophylaxis and therapy,
NUMBER OF SEQUENCES: 270
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                          GlnAsnGluIleCysLeuThrHisProIleThrLysTyrIleMetAlaCysMetSerAla
PatentIn Release #1.0, Version #1.25 (EPO)
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Matches:
Conservative:
Mismatches:
Indels:
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                                                                                                                                                                                                                                                                                                                                                                                      Gaps:
                      APPLICATION NUMBER: US/09/878,281 FILING DATE:
                                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/362,455
FILING DATE:
INFORMATION FOR SEQ ID NO: 31:
SEQUENCE CHARACTERISTICS:
LENGTH: 401 Dase pairs
TYPE: nucleic acid
STRANDEDNESS: single
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; Sequence 33, Application US/09878281
; Publication No. US20030032005A1
; GENERAL INFORMATION:
APPLICANT:
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672.00
97.74%
93.23%
               DATA
                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: CDNA HYPOTHETICAL: NO
             CURRENT APPLICATION
                                                                                                                                                                                                                            CLONE: HD10-1-25
                                                                                                                                                                                                                                                                                                                                               Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                 ANTI-SENSE: NO
IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                     NAME/KEY: CDS
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US-09-878-281-31
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81 SerGlnAlaAlaProTyrIleGluGlnAlaGlnValIleAlaHisGlnPheLysGlyLys 100
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Indels:
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Matches:
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APPLICATION NUMBER: US/09/878,281
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Patent No. US2002102240A1
GENERAL INFORMATION:
APPLICANT: RICE, CHARLES et al.
TITLE OF INVENTION: FUNCTIONAL DNA CLONE FOR HEPATITIS C
TITLE OF INVENTION: FUNCS (HCV) AND USES THEREOF
NUMBER OF SEQUENCES: 21
CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL & HAFERRAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
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101
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Mismatches:
Indels:
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                   ON: Chimeric HCV/GBV-B viruses
ID01116
                                                                                                                                                                                                                                                                                                                                                                                                                                Length:
Matches:
                                                                    | CURRENT APPLICATION NUMBER: US/09/742,659 | CURRENT FILING DATE: 2000-12-21 | PRIOR APPLICATION NUMBER: US 60/171,469 | PRIOR FILING DATE: 1999-12-22 | NUMBER OF SEQ ID NOS: 16 | SOFTWARE: Patentin Ver. 2.1 | SEQ ID NO 3 | SEQ ID NO 3 | SEQ ID NO 3 | SEG ID NO 3 | S
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MEDIUM TYPE:
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS.
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539.00
83.468
75.948
APPLICANT: Lemon, Stanley M. TITLE OF INVENTION: Chimeric FILE REFERENCE: ID01116
                                                                                                                                                                                                                                                                                                                    ; ORGANISM: Hepatitis C virus US-09-742-659-3
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Best Local Similarity:
Query Match:
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US-09-238-076-1
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                                                                                                                                                                                                                                                                                              TYPE: DNA
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5535 GCCTCGGCCTCCTGCAGACCGCGTCCCGCCAAGCAGGTTATCACCCCTGCTGTCCAG 5594
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TITLE OF INVENTION: FUNCTIONAL DNA CLONE FOR HEPATITIS C
VIRUS (HCV) AND USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9646
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PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-638-693-36 (1-133) x US-09-238-076-1 (1-9646)
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Matches:
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                                                                                                                                                                                                6029-4831
                                 US/09/238,076
                                                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 09/034,756
                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFRENCE/DOCKET NUMBER: 6029
TELECOMMUNICATION INFORMATION:
TELEPHONE: 314-727-5188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Sequence 1, Application US/0995937; Publication No. US20030028010A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.67e-66
539.00
83.46%
75.94%
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INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 9646 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 21
                  DATA
                                                                                                                                                                                                                                                                                                                        TYPE: nucleic acid
STRANDEDNESS: double
                                 APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                linear
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Query Match:
DB:
                                                                     CLASSIFICATION:
                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score:
Percent Similarity:
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Pred. No.:
                                                                                                                                                                                                                                                                                                                                                            TOPOLOGY:
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US-09-995-937-1
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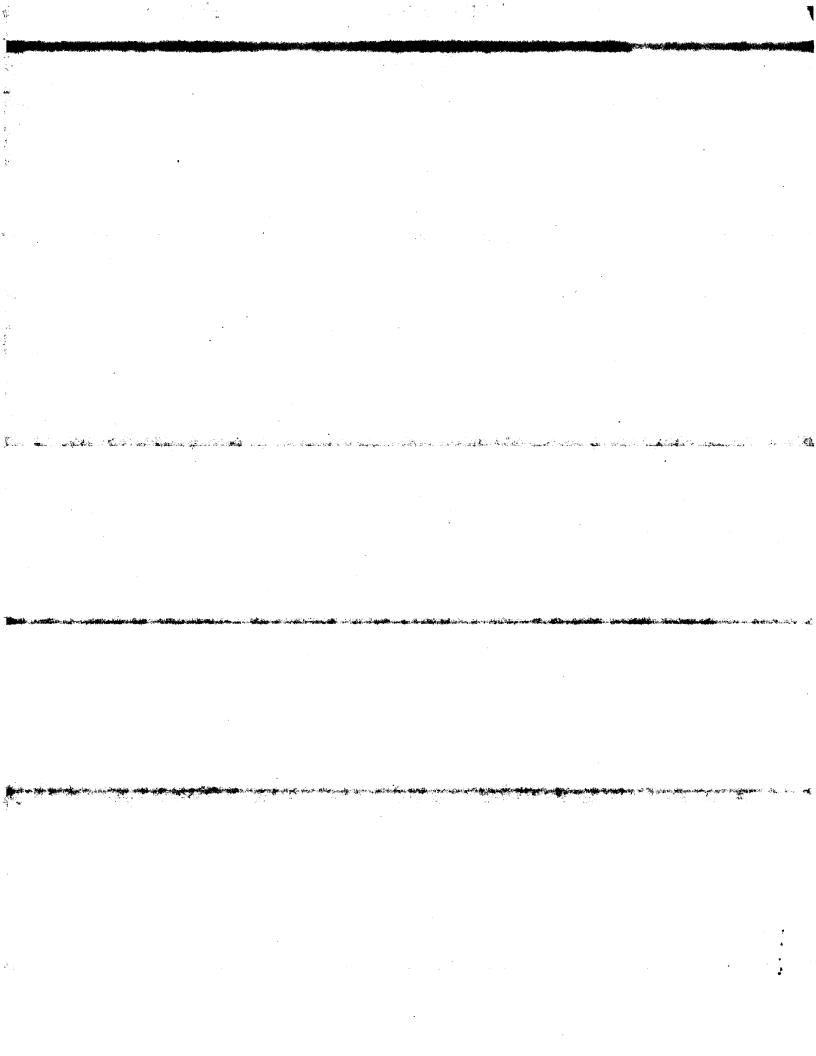
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5535 GCCCTCGGCCTCCTGCAGCACCGCGTCCCGCCAAGAGATTATCACCCCTGCTGCAG 5594
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                                                                                                                              MELLUM ITEE: FLUPEY ULSE.

COMEDIER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/995,937
FILING DATE: 28-No. US20020028010A1-2001
CLASSIFICATION OF CURROWN>
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US/09/034,756
FILING DATE: 04-May-1998
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
NAME: HOLLAND, DONALD R.
TELEFRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 6029-4831
TELEFRATION INFORMATION:
TELEFRAX: 314-727-5188
TELEFRAX: 314-727-5188
TELEFRAX: BAT-727-5188
TELEFRAX: BAT-727-5188
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101
10
22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length:
Matches:
Conservative:
Mismatches:
Indels:
Gaps:
             ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
CITY: ST. LOUIS
STATE: MO
COUNTRY: USA
ZIP: 63105
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-638-693-36 (1-133) x US-09-995-937-1 (1-9646)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
SEQUENCE DESCRIPTION: SEQ ID NO: 1:
US-09-995-937-1
                                                                                                                         MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 9646 base pairs
TYPE: nucleic acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.67e-66
539.00
83.468
75.948
77.118
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HYPOTHETICAL: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ANTI-SENSE: NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Percent Similarity:
Best Local Similarity:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alignment Scores:
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DB:
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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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OM protein - protein search, using sw model

August 29, 2003, 11:16:00; Search time 27 Seconds (without alignments) 473.720 Million cell updates/sec Run on:

US-09-638-693-36 699 1 QNEICLTHPITKYIMACMSA.....VIEPIVTTNWQKLEAFWHKH 133 Title: Perfect score:

Sequence:

283308 segs, 96168682 residues Searched:

BLOSUM62. Gapop 10.0 , Gapext 0.5

Scoring table:

283308 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR_76:* Database

1: pirl:* 2: pir2:* 3: pir3:* 4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

nonstructural prot nonstructural prot nonstructural prot nonstructural prot nonstructural prot probable membrane genome polyprotein polyprotein - hepa polyprotein - hepa genome polyprotein genome polyprotein genome polyprotein genome polyprotein genome polyprotein polypeptide - hepa genome polyprotein genome polyprotein polyprotein genome polyprotein genome polyprotein genome polyprotein hypothetical prote hypothetical prote probable periplasm probable periplasm hypothetical 123.8 hypothetical prote nonstructural Description genome genome SUMMARIES S40770 S18030 GNWVCJ GNWVTC A45573 GNWVTW PC2219 JQ1303 GNWVJ8 S35629 PQ0560 PQ0564 PQ0562 PC1306 PC1307 GNWVC3 GNWVCH PS0326 JQ1366 Query Match Length DB 3010 3010 3010 3010 3010 Result ٠ ک

RESULT 2 PC1307

prot

Ground polyprotein NS4a epitope containing region (isolate HD10-1) - hepatitis C vir C; Species: hepatitis C virus
C; Species: hepatitis C virus
C; Date: 03-May-1994 #text_change 17-Nov-2000
C; Accession: PC1307
R; Stuyver, L.; Van Arnhem, W.; Myseur, A.; DeLeys, R.; Maertens, G.
Biochem. Biophys. Res. Commun. 192, 635-644, 1993
A; Title: Analysis of the putative E envelope and NS4a epitope regions of HCV type 3 A; Reference number: PC1300; MUID:93249436; PMID:7683463
A; Accession: PC1307
A; Molecule type: mRNA
A; Residues: 1-142 <STU>
A; Cross references: DDB5:D14602
A; Cross references: DDB6:D14602
A; Cross references: DDB5:D14602
A; Cross references

TPR-repeat-contain	transcription fact	NCE3 protein - yea	probable cytosine	cell fusion glycop	ribonuclease inhib	prolyl aminopeptid	hypothetical prote	phosphoribosylamin	probable regulator	hypothetical prote	hypothetical prote	nitrogenase (EC 1.	hypothetical prote	two-component sens	hypothetical prote
B97014	S49583	S62958	G71463	T08210	A31857	JC4623	F75484	AJHUPR	T51765	T21064	S62419	JN0888	F64155	AC1913	T25433
7	7	7	7	7	7	7	7	-	7	7	7	7	7	7	7
346	370	221	163	546	456	427	617	1010	175	2761	1428	295	451	674	1016
10.7	10.6	10.4	10.4	10.4	10.2	10.2	10.2	10.2	10.1	10.0	6.6	6.6	6.6	6.6	6.6
74.5	74	73	72.5	72.5	71.5	7.1	7.1	7.1	70.5	7.0	69.5	69	69	69	69
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

RESULT 1 PC1306	
genome pol	genome polyprotein NS4a epitope containing region (isolate BR36-20) - hepatitis C virgon (society basatitis C virus
C; Decres: Repartition C; Date: 03-May-1994 C; Accession: PC1306	C.becession: Polyacture C virus C.bate: 03-May-1994 #sequence_revision 03-May-1994 #text_change 17-Nov-2000 C.becession: PC1306
R; Stuyver,	R;Stuyver, L.; Van Arnhem, W.; Wyseur, A.; DeLeys, R.; Maertens, G.
Biochem. E	Biochem. Biophys. Res. Commun. 192, 635-641, 1993 Artile: Analysis of the putative El envelone and NS4a epitope regions of HCV type 3
A; Reference number:	A) Reference number: PC1300; MUID:93249436; PMID:7683463
A; Molecule	A; Molecule type: mRNA
A; Residues	A; Residues: 1-209 <stu></stu>
A; Experime	A;cross-rererences: Dubd:D14600; N1D:g303384; F1DN:BAA03449.1; F1D:g303383 A:Experimental source: blood
C;Superfan C;Keywords	C;Superfamily: hepatitis C virus genome polyprotein C;Keywords: nonstructural protein; polyprotein
Query Match	98.98;
Best Loc Matches	Best Local Similarity 99.2%; Pred. No. 7.4e-62; Matches 132; Conservative 0; Mismatches 1; Indels 0; Gaps 0;
Qy	1 ONEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK 60
qa	77 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAXCLSVGCVVIVGHIELGGK 136
Qy	61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
qa	137 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKEKVLGLLQRATQQQAVIEPIVT 196
Qy	121 TNWQKLEAFWHKH 133
qa	

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A; Description: Genomic structure of the human prototype strain H of hepatitis C virus A; Reference number: A36814
A; Accession: A36814.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rinchauspe, G.; Zebedee, S.; Lee, D. H.; Sugitani, M.; Nasoff, M.; Prince, A.M. Proc. Natl. Acad. Sci. U.S.A. 88, 10292-10296, 1991
A;Titchauspe, G.; Zebedee, S.; Lee, D. H.; Sugitani, M.; Nasoff, M.; Prince, A.M. A;Titchauspe, G.; Zebedee, S.; Lee, 10292-10296, 1991
A;Titchauspe, G.; Zebedee, S.; Lee, 10292-10296, 1991
A;Titchauspe, G.; Zebedee, S.; Lee, 10292-10296, 1991
A;Titchauspe, G.; Suberden, C.; Superden, C.; Superden, G.; Superden, C.; Superden, G.; 
                                                                                                                                                                                                                                                                                                                                                                                              genome polyprotein - hepatitis C virus (strain H)
N:Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstru
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
C;Species: hepatitis C virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           F;1616-1862/Product: nonstructural protein NS4a #status predicted <N4A>
F;1863-2013/Product: nonstructural protein NS4b #status predicted <N4B>
F;2014-3011/Product: nonstructural protein NS5 #status predicted <NS5>
F;2014-3011/Product: nonstructural protein NS5 #status predicted <NS5>
F;186,209,234,305,325,417,423,430,448,476,532,540,556,576,623,645,1213,1255,2041,2240
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R;Li, J.S.; Tong, S.P.; Vitvitski, L.; Lepot, D.; Trepo, C.
Gene 105, 167-172, 1991
A;Title: Two French genotypes of hepatitis C virus: homology of the predominant genot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Note: host Homo sapiens (man)
C; Date: 31-Dec-1992 #sequence_revision 31-Dec-1992 #text_change 19-Jan-2001
C; Date: 31-Dec-1992 #sequence_revision 31-Dec-1992 #text_change 19-Jan-2001
C; Accession: A36814; A41546
E; Inchauspe, G.; Zebedee, S.; Lee, D.H.; Sugitani, M.; Nasoff, M.; Prince, A.M. submitted to GenBank, July 1992.
61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polyprotein – hepatitis C virus (isolate Fla) (fragments)
C;Species: hepatitis C virus
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 17-Nov-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: genomic RNA
A;Residues: 1-3011 <INC>
A;Cross-references: GB:M67463; NID:9329737; PIDN:AAA45534.1; PID:9329738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
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; Pred. No. 8.1e-45;
10; Mismatches 23; Indels
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Best Local Similarity 75.2%;
Matches 100; Conservative 10
                                                                                                                                                            121 TNWQKLEAFWHKH 133
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Grontains: capsid protein C virus (strain HCV-1)

Grontains: capsid protein C virus

Crontains: capsid protein C virus

A; Title: capting C virus

A; Reference number: A39166; MUD: 91172826; PMID: 1848704

A; Residuas: 1-001 mcCHO

A; Rossiduas: 1-001 mcCHO

A; Residuas: 1-001 mcCHO

A; Recession: pQ0493; MUD: 91228897; PMID: 1316939

A; Recession: pQ0404

A; Residuas: 1-001 mcCHO

C; Reynords: AfP: capsid protein C * status predicted < ARE>

F; 115 Product: any approach protein; alvatus predicted < ARE>

F; 115 Product: any approach protein Not * status predicted < REP

F; 116 -191 Product: any apparent Not * status predicted < ARE>

F; 116 -191 Product: monstructural protein NS; status predicted < REP

F; 110 -110 -110 mcCHO

F; 110 -110 -110 mcCHO

F; 110 -110 mcCHO

F; 110 -110 -110 mcCHO

F; 110 -110 mcC
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F;1863-2013/Product: nonstructural protein NS4b #status predicted <N4B>
F;2014-3011/Product: nonstructural protein NS5 #status predicted <NS5>
F;2034-3011/Product: nonstructural protein NS5 #status predicted <NS5>
F;196,209,234,305,325,417,423,430,448,476,532,540,556,576,623,645,1213,1255,2041,2077,22
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                                                                                                                                                                                                                                                                       69
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                                                                                                                                                                                    1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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                                         Length 142;
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                                                                                                               Indels
                                Score 672; DB 2; Le
Pred. No. 3.9e-60;
; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        polyprotein - hepatitis C virus (strain HCV-1)
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Pred. No. 8.1e-45;
                                                                                                               6; Mismatches
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                                96.1%;
93.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 TNWOKLEAFWHKH 133
                        Query Match
Best Local Similarity 93.23
Matches 124; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity 74.499; Conservative
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Matches 9
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N;Contains:
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A; Kesdudes: 1.3011 (ARA)

A; Cross-references: EWBL:D10749; NID:9221586; PIDN:BAA01582.1; PID:9221587

B; Okamoto, H.; Okada, S.; Sugiyama, Y.; Yotsumoto, S.; Tanaka, T.; Yoshizawa, H.; TS: Jpn. J. Exp. Med. 60, 167-177, 1990

A; Title: The S'-terminal sequence of the hepatitis C virus genome.

A; Reference number: PC1284; MUID:91013116; PMID:2170712

A; Residues: 1-513 < CAK2>
A; Molecule type: genomic RNA

A; Residues: 1-513 < CAK2>
A; Molecule type: genomic RNA

A; Residues: 1-513 < CAK2>
A; Rolecule type: genomic RNA

A; Residues: 1-513 < CAK2>
A; Molecule type: genomic RNA

A; Residues: 1-513 COK2>
A; Reperimental source: isolate HC-J1
C; Reywords: ATP: glycoprotein; hydrolase; nucleotide choloring P-loop; polyprotein; S; Superfamily: hepatitis C virus genome polyprotein
C; Reywords: ATP: glycoprotein; hydrolase; nucleotided < CRP>
F; 116-191/Product: envelope protein M #status predicted < CRP>
F; 116-191/Product: envelope protein M #status predicted < N31>
F; 730-729/Product: nonstructural protein NSI #status predicted < N32>
F; 1000-1615/Product: nonstructural protein NSI #status predicted < N32>
F; 130-12006/Product: nonstructural protein M #status predicted < N32>
F; 1312-1317/Region: nucleotide-binding motif A (P-loop)
F; 1312-1317/Region: nucleotide-binding motif B
F; 1312-1317/Region: nucleotide-binding motif B
F; 1312-1317/Region: DESH motif.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N.Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstriprotein NS4a; nonstructural protein NS4b; nonstructural protein NS5 C; Species: hepatitis C virus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Variety: isolate JKI
C; Date: 19-May-2000 #text_change 23-Mar-2001
C; Accession: S18030; S33570; A48332; S18029ashi, K.; Murakami, S.
R; Honda, M.; Kaneko, S.; Masashi, U.; Kobayashi, K.; Murakami, S.
submitted to the EMBL Data Library, September 1991
A; Description: A whole genome of hepatitis C virus CDNA was isolated from a single p A; Reference number: S18028
A; Molecule type: genomic RNA
A; Molecule type: genomic RNA
A; Residues: 1-3010 <-HON>
A; Cross-references: EMBL: X61596; NID: 959478; PIDN: CAA43793.1; PID: 959479
A; Experimental source: isolate JKI from an individual
B; Honda, M.; Kaneko, S.; Unoura, M.; Kobayashi, K.; Murakami, S.
Arch. Virol. 128, 163-169, 1993
A; Title: Sequence analysis of putative structural regions of hepatitis C virus isola A; Reference number: A48332; MuID: 93119270; PMID: 8380322
A; Accession: S3570
A; Accession: 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: genomic RNA
A;Residues: 1-547,'T',549-621,'V',623-624,'S',626-652,'DL',655-761,'T',763-782 <HOW>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Note: this sequence is inconsistent with the nucleotide translation
A;Note: the authors translated the codon AGG for residue 43 as Pro, TGG for residue
as Trp, and TTC for residue 771 as Ser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;1616-1862/Product: nonstructural protein NS4a #status predicted <N4A>F;1863-2013/Product: nonstructural protein NS4b #status predicted <N4B>F;2014-3011/Product: nonstructural protein NS5 #status predicted <NS5>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 3011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               75.7%; Score 529; DB 1; Length 30 73.7%; Pred. No. 2.6e-44; ive 13; Mismatches 22; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  genome polyprotein - hepatitis C virus (isolate JK1)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121 TNWOKLEAFWHKH 133
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 73.73
Matches 98; Conservative
                   A; Molecule type: genomic A; Residues: 1-3011 < OKA>
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C;Species: hepatitis C virus
C;Species: hepatitis C virus
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 17-Nov-2000
C;Accession: 401366
R;Kremsdorf, D.; Porchon, C.; Kim, J.P.; Reyes, G.R.; Brechot, C.
A;Title: Partial nucleotide sequence analysis of a French hepatitis C virus: implication A;Reference number: 401366; MUID:92013977; PMID:1655961
A;Accession: 401366
A;Accession: 401366
A;Residues: 1-716 <KRE>
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$40770
genome polyprotein - hepatitis C virus
N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstructu
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
C;Species: hepatitis C virus
C;Accession: $40770; pc1285
R;Okamoto, H.
R;Okamoto, H.
R;Okamoto, H.
Reference number: $40770
A;Reference number: $40770
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:84,90,97,115,143,199,223,243,290,312/Binding site: carbohydrate (Asn) (covalent) #stat
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  143 PAIIPDREVLYQEFDEMEECSQHLPYIEQGMMLAEQFKQKALGLLQTASRQAEAITPAVQ 302
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
A;Reference number: PS0326; MUID:92039028; PMID:1718820
A;Accession: PS0326
A;Molecule type: genomic RNA
A;Residues: 1-492 <LIJ>
A;Cross-references: GB:M60220
A;Note: this sequence corresponds to nonstructural protein NS3 region A;Note: translation of the nucleotide sequence is not complete C;Superfamily: hepatitis C virus genome polyprotein
C;Keywords: polyprotein
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Pred. No. 5.2e-45;
3; Mismatches 22;
                                                                                                                                                                                                                                                                                                                                                                          Query Match 76.1%; Score 532; DB 2; Best Local Similarity 74.4%; Pred. No. 1.7e-45; Matches 99; Conservative 11; Mismatches 23;
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73.78;
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TNWQRLETFWAKH 315
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TNWORLEAFWAKH 713
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Best Local Similarity
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F;196,209,234,250,305,325,417,423,430,448,532,556,576,623,645,1213,1255,2041,2077,224
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A Residues: 1-3010 (KAT)
A Nolecule type: genomic RNA
A Residues: 1-3010 (KAT)
A Cross references: GB:090208; NID:9221610; PIDN:BAA14233.1; PID:9221611
B Kato, N.; Ohkoshi, S.; Shimotohno, K.
B Forc. Jpn. Acad. 65B, 219-223, 1989
A Title: Japanese isolates of the non-A, non-B hepatitis viral genome show sequence variance in the sequence number: PS0085
A; Reference number: PS0085
A; Molecule type: genomic RNA
A; Residues: 2650-2707 (KAZ)
A; Experimental source: Japanese isolate
C; Comment: The cleavage sites of this polyprotein have not been determined.
C; Superfamily: hepatitis C virus genome polyprotein
C; Keywords: ATP; glycoprotein; hydrolase; nucleotide binding; P-loop; polyprotein; E; 2-115/Product: envelope protein M #status predicted (KEPM)
F; 101-191/Product: major envelope protein B #status predicted (NS)
F; 1006/Product: nonstructural protein NS2 #status predicted (NS2)
F; 1006/Product: nonstructural protein NS2 #status predicted (NS2)
F; 101-131/Region: nucleotide-binding motif A (P-loop)
F; 1312-1317/Region: nucleotide-binding motif B F; 1312-1312/Region: nucleotide-binding motif B F; 1312-1317/Region: nucleotide-binding motif B F; 1312-1317/Region: nucleotide-binding motif B F; 1312-1317/Region: nucleotide-binding motif B F; 1312-1312/Region: nucleotide-binding motif B F; 1312-1317/Region: nucleotide-binding motif B F; 1312-1317/Region: nucleotide-binding motif B F; 1312-1317/Region: nucleotide-binding motif B F; 1312-13127/Region: nucleotide-binding motif B F; 1312-13127/Region: nucleotide-binding motif B F; 1312-13127/Region: nucleotide-binding
A; Note: sequence extracted from NCBI backbone (NCBIN:121747, NCBIP:121748)
C; Superfamily: hepatitis C virus genome polyprotein
C; Superfamily: hepatitis C virus genome polyprotein
C; Superfamily: hepatitis C virus genome polyprotein
F; 2-115/Product: capsid protein C #status predicted <CPC>
F; 116-191/Product: envelope protein M #status predicted <MED>
F; 129-389/Product: major envelope protein NSI #status predicted <MED>
F; 300-729/Product: monstructural protein NSI #status predicted <NSI>
F; 300-1006/Product: nonstructural protein NSI #status predicted <NSI>
F; 310-1137/Region: nucleotide-binding motif A (P-loop)
F; 1310-11317/Region: nucleotide-binding motif B (P-loop)
F; 1316-1319/Region: DEXH motif
F; 1316-1319/Region: nucleotide-binding motif B F; 1316-1319/Region: nonstructural protein NS5 #status predicted <NA5>
F; 1360-209, 234, 250, 305, 417, 423, 448, 532, 540, 556, 576, 623, 645/Binding site: carbohydrate (As
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N;Contains: capsid protein C; envelope protein M; major envelope protein E; nonstructural protein NS4a; nonstructural protein NS5
C; Species: hepatitis C virus
C; Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 19-Jan-2001
C; Accession: A39573; PS60086
R; Kato, N, Hijkata, M.; Ootsuyama, Y.; Nakagawa, M.; Ohkoshi, S.; Sugimura, T.; Shimot Proc. Nati. Acad. Sci. U.S.A. 87, 9524-9528, 1990
A;Title: Molecular cloning of the human hepatitis C virus genome from Japanese patients
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genome polyprotein - hepatitis C virus N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstruing protein NS4s; nonstructural protein NS4b; nonstructural protein NS5 C;Species; hepatitis C virus C;Species; hepatitis C virus C;Date: 31-Mar-1992 #sequence_revision 31-Mar-1992 #text_change 19-Jan-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R.Takamizawa, A.; Mori, C.; Fuke, I.; Manabe, S.; Murakami, S.; Fujita, J.; Onishi, E. J. Virol. 65, 1105-1113, 1991
A.Title: Structure and organization of the hepatitis C virus genome isolated from hum A; Reference number: A38465; MUID:91140698; PMID:1847440
A; Accession: A38465
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C;Superfamily: hepatitis C virus genome polyprotein
C;Superfamily: hepatitis C virus genome polyprotein
C;Superfamily: hepatitis C virus genome polyprotein; dlycoprotein; hydrolase; nonstruct
C;Superfamily: hepatitis C virus genome polyprotein; hydrolase; nonstruct
F;2-115/Product: capsid protein C #status predicted <EPM>
F;116-191/Product: envelope protein M #status predicted <EPM>
F;30-739/Product: nonstructural protein NS1 #status predicted <NS2>
F;730-1006/Product: nonstructural protein NS2 #status predicted <NS2>
F;107-101/Froduct: hepativinin #status predicted <NS3>
F;1230-1237/Region: nucleotide-binding motif A (P-loop)
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N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstru
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
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F;1863-2013/Product: nonstructural protein NS4b #status predicted <NAB>
F;2014-3010/Product: nonstructural protein NS5 #status predicted <NS5>
F;2014-3010/Product: nonstructural protein NS5 #status predicted <NS5>
F;196,209,234,250,305,325,417,423,430,448,532,540,556,576,623,645,1213,1255,2041,2077
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Length 3010;
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Score 493; DB 1;
Pred. No. 1.1e-40;
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70.5%;
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1752 SKWRALEVFWAKH 1764
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SKWRALETFWAKH 1764
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                                                                            91; Conservative
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                                                                                           R; Tanaka, T.; Kato, N.; Nakagawa, M.; Ootsuyama, Y.; Cho, M.J.; Nakazawa, T.; Hijikata, Virus Res. 23, 39-53, 1992
A; Title: Molecular cloning of hepatitis C virus genome from a single Japanese carrier: S; Reference number: A45573; MUID:92295714; PMID:1318627
A; Accession: A45573
A; Reference number: A5573; MUID:92295714; PMID:1318627
A; Accession: A45573
A; Residues: PABLIANAN
A; Residues: 1-3010 cTAN>

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Cisuperfamily: hepatitis C virus genome polyprotein (Cisuperfamily: hepatitis C virus genome polyprotein; discontinumily: hepatitis C virus genome polyprotein; discontinumily: hepatitis C virus genome protein; discontinumily: hepatid protein c status predicted <CPC>
Fil6-191/Product: capsid protein C #status predicted <CPC>
Fil6-191/Product: major envelope protein E #status predicted <MEE>
Fil92-389/Product: major envelope protein E #status predicted <MEE>
Fil730-1006/Product: nonstructural protein NS2 #status predicted <NS2>
Fil007-1615/Product: nonstructural protein NS2 #status predicted <NS2>
Fil007-1615/Product: hepacivirin #status predicted <NS2>
Fil1230-1237/Region: nucleotide-binding motif A (P-loop)
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N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstructu
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
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Virology 188, 102-113, 1992
A;Title: The Taiwanese hepatitis C virus genome: sequence determination and mapping the
A;Reference number: A40244; MUID:92230206; PMID:1314449
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C;Species: hepatitis C virus
C;Date: 19-May-2000 #sequence_revision 19-May-2000 #text_change 19-Jan-2001
C;Accession: A45573
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C;Date: 31-Dec-1992 #sequence_revision 31-Dec-1992 #text_change 19-Jan-2001
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F;1616-1862/Product: nonstructural protein NS4a #status predicted <N4A>
F;1663-2013/Product: nonstructural protein NS4b #status predicted <N4B>
F;2014-3010/Product: nonstructural protein NS5 #status predicted <NS5>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. 1.7e
15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : |: ||||| || SRWRALEAFWAKH 1764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TNWOKLEAFWHKH 133
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: genomic RNA A; Residues: 1-3010 <CHE>
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nes 92; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
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Matches
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F;1616-1862/Product: nonstructural protein NS4a #status predicted <N4A>
F;1863-2013/Product: nonstructural protein NS4b #status predicted <N4B>
F;2014-3010/Product: nonstructural protein NS5 #status predicted <NS5>
F;196,209,233,234,250,305,325,417,423,430,448,532,540,556,576,623,645,1213,1255,2041,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 genome polyprotein - hepatitis C virus (isolate EUH1480)
N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstru
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Species: hepatitis C virus
C;Date: 19-May-2000 #sequence_revision 19-May-2000 #text_change 19-Jan-2001
C;Accession: JC5650
R;Chamberlain, R.W.; Adams, N.J.; Taylor, L.A.; Simmonds, P.; Elliott, R.M.
Biochem Biochem B. Oummun. 236, 44-49, 1997
A;Title: The complete coding sequence of hepatitis C virus genotype 5a, the predomin. A;Reference number: JC5620; MUID:97366593; PMID:9223423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A Molecule type: mRNA
A, Residues: 1-3014 < CHA>
A, Molecule type: mRNA
A, Residues: 1-3014 < CHA>
A, Cross-references: Ga: 13184
A, Cross-references: Ga: 13184
A, Experimental source: genotype 5a, which predominates in South Africa
A, Note: the translation of the nucleotide sequence is not complete in this paper
C, Superfamily: heptitis C virus genome polyprotein
C, Reywords: AFP; glycoprotein; hydrolase: nucleotide binding; P-loop; polyprotein;
C, Reywords: AFP; glycoprotein; hydrolase: nucleotide binding; P-loop; polyprotein;
F; 2115/Product: capsid protein C **status predicted < CPC>
F; 130-1399/Product: major envelope protein B **status predicted < NS1>
F; 311-1007/Product: monstructural protein NS2 **status predicted < NS2>
F; 1008-1616/Product: nonstructural protein NS4 **status predicted < NA4>
F; 1317-1320/Region: nucleotide-binding motif A (P-loop)
F; 1317-1320/Region: box motif = brotein NS4 **status predicted < NA4>
F; 1864-2014/Product: nonstructural protein NS4 **status predicted < NA5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3014/Product: nonstructural protein NS5 **status predicted < NS5>
F; 2015-3015-3014/Product: nonstructural protein NS6 **status predicted < NS5>
F; 2015-3015-3014/Product: nonstructural protein NS6 **status predicted < NS5>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                                                                                                                                                                                                                                                                                                                                                           25; Indels
                                                                                                                                                                                                                                                       ; Score 490; DB 1;
; Pred. No. 2.1e-40;
13; Mismatches 25.
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completed: August 29, 2003, 11:19:36 ie : 30 secs
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polypeptide - hepatitis C virus (type 5a) (fragments)
N;Contains: core protein; El (carboxyl end); E2/NSl (amino end); NS3 protein; NS4A prote
S;Species: hepatitis C virus
C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change 17-Nov-2000
C;Accession: PC2219
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C;Species: hepatitis C virus
C;Date: 19-May-2000 #sequence_revision 19-May-2000 #text_change 17-Nov-2000
C;Accession: J01303
C;Accession: J01303
C;Accession: J01303
William William (Marchine)
W
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N;Contains: capsid protein C; envelope protein M; hepacivirin (EC 3.4.21.98) (nonstructu
protein NS4a; nonstructural protein NS4b; nonstructural protein NS5
                                                                                                                                                                                                                                                                                         and NS3/NS4 regions of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         F;412-783/Product: NS3 #status predicted <NSR>
F;784-837/Product: NS4A #status predicted <NSA>
F;784-837/Product: NS4B #status predicted <NSB>
F;838-876/Product: NS4B #status predicted <NSB>
F;281,287,294,312,340/Binding site: carbohydrate (Asn) (covalent) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEP 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           192-247/Product: El (carboxyl end) #status predicted <ERE>
248-411/Product: E2/NS1 (amino end) #status predicted <ERR>
                                                                                                                                                                                                                                                                                             E2,
                                                                                                                                                                                        R;Stuyver, L.; Arnhem, W.V.; Wyseur, A.; Maertens, G. Biochem. Biophys. Res. Commun. 202, 1308-1314, 1994 A;Title: Cloning and phylogenetic analysis of the core, A;Reference number: PC2219; MUID:94338342; PMID:7520237 A;Accession: PC2219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 424; DB 2;
Pred. No. 2.2e-34;
                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-876 <STU>
A; Cross-references: GB:L29577; GB:L29578; GB:L29579
A; Experimental source: serum
C; Superfamily: hepatitis C virus genome polyprotein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Keywords: glycoprotein
1-191/Product: core #status predicted <COE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F;248-411/Product: E2/No. (cmm.)
F;248-338/Region: E2
F;339-411/Region: NSI (amino end)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60.7%;
68.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 60.79
Best Local Similarity 68.49
Matches 80; Conservative
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Matches
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F;2018-3033/Product: nonstructural protein NS5 #status predicted <NO5>F;196,209,234,305,325,417,423,430,448,477,534,542,558,578,627,649,1091,1217,1259,2038
                                                                                                                                               2 NEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYGCCVVIVGHIELGGKP
                                                                                                                                                                                               62 AIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVTT
                                                                                         ö
                                                    Length 3033;
                                                                                         Indels
                                                  Score 423; DB 1;
Pred. No. 1.1e-33;
0; Mismatches 36;
                                                                                       20;
                                                      60.58;
57.68;
                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                    122 NWQKLEAFWHKH 133
                                                    Query Match
Best Local Similarity
Matches 76; Conserv
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GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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OM protein - protein search, using sw model

August 29, 2003, 10:55:59; Search time 19 Seconds (without alignments) 329.187 Million cell updates/sec Run on:

Title: Perfect score:

US-09-638-693-36 699 1 QNEICLTHPITKYIMACMSA.....VIEPIVTTNWQKLEAFWHKH 133 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

127863 segs, 47026705 residues Searched:

127863 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_41:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	P26664 h genome po	h genome	h genome	h genome	h genome		h genome	h genome	escherich	P53615 saccharomyc	Q8pm15 xanthomonas		P22102 h trifuncti	007458 rhodopseudo		Q09773 schizosacch	Q9p8j9 schizophyll			Q8xyw3 ralstonia s	P21872 g trifuncti	Q9zjt4 helicobacte	Q9x255 thermotoga	P14165 pseudomonas		P34943 bos taurus	084439 chlamydia t	Q55750 synechocyst	_	Q9c104 schizosacch	Q9z6k0 chlamydia p	Q97qj8 streptococc		
SUMMAKIES	ID	POLG HCV1	POLG_HCVH	POLG_HCVJA	POLG_HCVBK	POLG_HCVJT	POLG_HCVTW	POLG_HCVJ6	POLG_HCVJ8	YJEP_ECOLI	NCE3_YEAST	LPXD_XANAC	RINI_PIG	PUR2_HUMAN	BADR_RHOPA	LPXD_XANCP	YA84_SCHPO	RHO3_SCHCO	NIH1_RHOCA	SUN_HAEIN	ISPD_RALSO	PUR2_CHICK	RS4_HELPJ	PPNK_THEMA	CISY_PSEAE	Y4JD_RHISN	NUEM_BOVIN	GLYA_CHLTR	MFD_SYNY3	YLK1_CAEEL	YKT5_SCHPO	KSGA_CHLPN	EX7L_STRPN	EX7L_STRR6	
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	Length	3011	3011	3010	3010	3010	3010	3033	3033	1107	221	337	456	1010	175	337	1428	206	295	451	253	1003	208	258	428	511	380	497	1199	425	1076	277	446	448	
dР	ry	76.4	76.4	70.5	70.4	70.2	70.1	60.5	60.4	11.0	10.4	10.2	10.2	10.2	10.1	0	σ	σ	6.6	6.6	9.8	9.6	9.5	9.5	9.4	9.4	9.4	9.4	•		9.3	٠	9.5	•	
	Score	534	534	493	492	491	490	423	422	77	73	71.5	71.5	71	70.5	69.5	σ.	69	69		68.5	67	66.5	66.5	99		ഥ	65.5	വ	65		4	64.5	9	
	Result No.	-	2	m	4	2	9	7	ω	Q	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	33	

Q9pjw0 chlamydia m		P30606 saccharomyc	Q96n76 homo sapien	Q9s7j8 arabidopsis	Q01056 herpesvirus	P54020 methanococc	Q9pir7 campylobact	Q59822 staphylococ	P40260 saccharomyc	P40221 cercopithec	P48092 macaca mula
GLYA_CHLMU	MSH6_ARATH	ITR2_YEAST	HUTU_HUMAN	AHM5_ARATH	TEGU_HSVSA	RS4_METJA	ARGD_CAMJE	DLDH_STAAM	MEP1_YEAST	IL15_CERAE	IL15_MACMU
7	Н	П	П	-	Н	Н	Н	Η.	۲,	Н	-
497	1324	612	929 .	1001	2469	187	395	468	492	162	162
9.5	9.5	9.5	9.5	9.5	9.5	9.1	9.1	9.1	9.1	9.0	0.6
		64	64	64	64	53,5	63.5	63.5	63.5	63	63
64.5	64.5					_					

ALIGNMENTS

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CAPSID PROTEIN ( POTENTIAL).
MADRIX PROTEIN (POTENTIAL).
MAJOR ENVELODE PROTEIN E (POTENTIAL).
NONSTRUCTURAL PROTEIN NS1/E2 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS2 (POTENTIAL).
PROTEASE/HELICASE NS3 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
RNA-DIRECTED RNA POLYMERASE (POTENTIAL).
                                                                                                                                                                                                                         Core protein; Coat protein; Envelope protein; Helicase; ATP-binding;
Transmembrane; Nonstructural protein; Hydrolase; Serine protease;
                                                                                                                                                                                                                Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase;
                                                                                                                                                                                                                                                  REMOVED FROM CAPSID PROTEIN C BY THE
                                                                                                                                                                                                                                                                                                                                                              SIMILARITY).
SIMILARITY).
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Pfam; PF01006; HCV_NS4s; 1.
Pfam; PF01001; HCV_NS4s; 1.
Pfam; PF01506; HCV_NS5s; 1.
Pfam; PF00291; helicase_C; 1.
Pfam; PF00998; Vital_RGRE; 1.
ProDom; PD186062; HCV_NS1; 1.
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Query Match 76.4%; Score 534; DB 1; Length 3011;
Best Local Similarity 74.4%; Pred. No. 3.9e-45;
Matches 99; Conservative 12; Mismatches 22; Indels 0; Gaps 0;
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PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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01-AUG-1992 (Rel. 23, Last sequence update)
01-AUG-1992 (Rel. 23, Last sequence update)
01-AUG-1992 (Rel. 24) Last annotation update)
Genome polyprotein (Contains: Capsid protein C (Core protein) (P22);
Envelope glycoprotein El (GP32) (GP35); Envelope glycoprotein E2
(GP68) (GP70) (NSI); Protein P7; Nonstructural protein NS2 (P21)
(EC 3.4.29.-); Protease/helicase NS3 (P70) (Hepacivirin)
(EC 3.4.21.98); Nonstructural protein NS5A (P45); Nonstructural protein NS5A (P56); Nonstructural protein NS5A (P66) (P70) (RNA-directed RNA polymerase) (EC 2.7.7.48)].
Hepatitis C virus (1solate H) (HCV).
Viruses; SSRNA positive-strand viruses, no DNA stage; Flaviviridae;
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Yao N., Hesson T., Cable M., Hong Z., Kwong A.D., Le H.V., Weber P.C.;
"Structure of the hepatitis C virus RNA helicase domain.";
Nat. Struct. Biol. 4:463-467(1997).
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Structure 6:89-100(1998).
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-i- FUNCTION: NS4A FORMS A COMPLEX WITH NS3 AND IS ESSENTIAL FOR THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ACTIVATION OF NS3.

-!- FUNCTION: NS5A SEBNS TO HAVE A TRANSCRIPTIONAL ACTIVATORY ROLE.
-!- FUNCTION: NS5A SEBNS TO HAVE A TRANSCRIPTIONAL ACTIVATORY ROLE.
-!- FUNCTION: NS5B IS A RNA-DEPENDENT RNA POLYMERASE THAT PLAYS AN ESSENTIAL ROLE IN THE VIROS REPLICATION.
-!- CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral precursor polyprotein, commonly with Asp or Glu in the P6 position, Cys or Thr in P1 and Ser or Ala in P1'.
-!- CATALXTIC ACTIVITY: N nucleoside triphosphate - N diphosphate +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kim J.L., Morgenstern K.A., Griffith J.P., Dwyer M.D., Thomson J.A., Murcko M.A., Lin C., Caron P.R.; "Hepatitis C virus NS3 RNA helicase domain with a bound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               딥
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Prince A.M.; "Genomic structure of the human prototype strain H of hepatitis virus: comparison with American and Japanese isolates."; Proc. Natl. Acad. Sci. U.S.A. 88:10292-10296(1991).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X-RAY CRYSTALLOGRAPHY (2.1 ANGSTROMS) OF 1207-1657.
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            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase;
Core protein; Coat protein; Envelope protein; Helicase; ATP-binding;
Transmembrane; Nonstructural protein; Hydrolase; Serine protease;
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NONSTRUCTURAL PROTEIN NS4A.
NONSTRUCTURAL PROTEIN NS5A.
NONSTRUCTURAL PROTEIN NS5A.
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NONSTRUCTURAL PROTEIN NS2.
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CAPSID PROTEIN C.
ENVELOPE GLYCOPROTEIN E1.
ENVELOPE GLYCOPROTEIN E2.
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InterPro; IPR002166; HCV_NS5a.
InterPro; IPR00166; HCV_NS5a.
InterPro; IPR001650; Helicase_C.
InterPro; IPR007094; RNA_pol_DS_PS.
InterPro; IPR007094; RNA_pol_DS_PS.
InterPro; IPR007094; RNA_pol_DS_PS.
InterPro; IPR007094; RNA_pol_PSvir.
Pfam; PF01543; HCV_core; 1.
Pfam; PF01560; HCV_NS1; 1.
Pfam; PF01560; HCV_NS3; 1.
Pfam; PF01000; HCV_NS3; 1.
Pfam; PF01001; HCV_NS3; 1.
Pfam; PF01001; HCV_NS4a; 1.
Pfam; PF01001; HCV_NS5; 1.
Pfam; PF01005; HCV_NS5; 1.
Pfam; PF01007; HCV_NS5; 1.
Pfam; PF01007; HCV_NS5; 1.
Pfam; PF01007; HCV_NS5; 1.
                                                                                                                        EMBL; MG7463; AAA45534.1; --
PIR; A36814; CNWVCH.
PDB; 1HET; 25-NOV-98
PDB; 1AIK; 17-JUN-98
PDB; 1AIK; 17-JUN-98
MEROPS; S29.001; --
MEROPS; S29.001; --
MEROPS; U39.001; --
MEROPS; U39.001; --
INTERPOS; PR002522; HCV_capsid.
INTERPOS; IPR002521; HCV_cars.
INTERPOS; IPR002531; HCV_ENS.
INTERPOS; IPR002531; HCV_NS2.
INTERPOS; IPR004109; HCV_NS2.
INTERPOS; IPR004109; HCV_NS2.
INTERPOS; IPR004109; HCV_NS4.
INTERPOS; IPR001469; HCV_NS4.
INTERPOS; IPR001469; HCV_NS4.
INTERPOS; IPR001669; HCV_NS4.
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1632 QNEVTLTHPITKYIMTCMSADLEVVTSTWVLVGGVLAALAAYCLSTGCVVIVGRIVLSGK 1691
                                                                 1692 PAIIPDREVLYQEFDEMEECSQHLPYIEQGMMLAEQFRQRALGLLQTASRHAEVITPAVQ 1751
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                                          PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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01-AUG-1992 (Rel. 23, Last sequence update)
01-AUG-1992 (Rel. 23, Last sequence update)
01-AUG-1992 (Rel. 41, Last annoctation update)
03-FB-2003 (Rel. 41, Last annoctation update)
04-CHORN (Rel. 41, Last annoctation update)
05-CHORN (Rel. 41, Last annoctation update)
05-CHORN (Rel. 41, Last annoctation update)
05-CHORN (Rel.) Protein FI (GP32) (GP35); Envelope glycoproctein E2
05-CHORN (Rel.) Protein FI (GP32) (GP35); Envelope glycoproctein E2
05-CHORN (Rel.) Protein Rel. (Repactivirin)
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06-CHORN (Repactivirin)
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NS3 AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION.

CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral precursor polyprotein, commonly with Asp or Glu in the P6 position, Cys or Thr in P1 and Ser or Ala in P1'.

CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: PROFIEIN A AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRAN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DISCUSSION OF SEQUENCE.
MEDLINE-91192160; PubMed-1849488;
Mato N., Hijikata M., Nakagawa M., Ootsuyama Y., Muraiso K.,
Ohkoshi S., Shimotohno K.;
"Molecular structure of the Japanese hepatitis C viral genome.";
FEBS Lett. 280:325-328(1991).
- FUNCTION: THE SMALL PROFEINS NSZA, NSZB, NS4A AND NS4B ARE
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SEQUENCE FROM N.A.
MEDLINE-91088550; PubMed-2175903;
MATO. N., Hilikata M., Ootsayama Y., Nakagawa M., Ohkoshi S.,
Sugimura T., Shimotohno K.;
"Molecular cloning of the human hepatitis C virus genome from
Japanese patients with non-A, non-B hepatitis.";
Proc. Natl. Acad. Sci. U.S.A. 87:9524-9528(1990).
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InterPro; IPR002522; HCV_capsid.
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MEROPS; S29.001; -
MEROPS; U39.001; -
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MATRIX PROTEIN ( POTENTIAL).
MAJOR ENVELOPE PROTEIN E ( POTENTIAL).
NONSTRUCTURAL PROTEIN NS1 ( POTENTIAL).
NON-STRUCTURAL PROTEIN NS2 ( POTENTIAL).
PROTEASE/HELICASE NS3 ( POTENTIAL).
NONSTRUCTURAL PROTEIN NS4 ( POTENTIAL).
NONSTRUCTURAL PROTEIN NS4B ( POTENTIAL).
RNA-DIRECTED RNA POLYMERASE ( POTENTIAL).
POTENTIAL.
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Pred. No. 5e-41;
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Pfam; PF02907; HCV_NS3; 1.
Pfam; PF01001; HCV_NS4s; 1.
Pfam; PF01506; HCV_NS5s; 1.
Pfam; PF00271; helicase_C; 1.
Pfam; PF00998; Viral_RGRP; 1.
Probom; P186062; HCV_NS1; 1.
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X MEDLINE-98227044.

Yan Y., Li Y., Munshi S., Sardana W.,

X Stainkuehler C., Tomel L., de Francesco R., Kuo L.C., Chen Z.;

"Complex of NS3 protease and NS4A peptide of BK strain hepatitis C.

"Complex of NS3 protease and NS4A peptide of BK strain hepatitis C.

"Trus: a 2.2-A resolution structure in a hexagonal crystal form.";

Protein Sci. 7:837-847(1998).

"The SMALL PROTEINS NS2A, NS2B, NS4A AND NS4B ARE HYDROPHOBIC, SUGGESTING A POSSIBLE MEMBRANE-RELATED FUNCTION.

NS3 AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION.

"C -1- CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral postition, Cys or Thr in Pl and Ser or Ala in pl.

"C -1- CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
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15-SEP-2003 (Rel. 42, Last annotation update)
16-SEP-2003 (Rel. 42, Last Sequence update)
16-SEP-2003 (Rel. 42, Last September 16-SEP-2003 (Rel. 42, Last September 16-SEP-2003)
16-SEP-2003 (Rel. 42, Last September 
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BODILINE-POT10508; Pubmed-8861916;

LOVE R.A., PATGE H.E., Wickerskam J.A., Hostomsky Z., Habuka N.,

Moomaw E.W., Adachi T., Hostomska Z.;

The crystal structure of hepatitis C virus NS3 proteinase reveals

trypsin-like fold and a structural zinc binding site.";

Cell 87:331-342(1996).
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SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY
LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS:
PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF
PROTEIN C AND MRNA.
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Borowski P., Heiland M., Oehlmann K., Becker B., Korneteky L.;
"Non-structural protein 3 of hepatitis C virus inhibits
phosphorylation mediated by cAMP-dependent protein kinase.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAPSID PROFEEN C (POTENTIAL).
MATRIX PROTEEN (POTENTIAL).
MAJOR ENVELOPE PROTEEN E (POTENTIAL).
NONSTRUCTURAL PROTEEN NSJ/E2 (POTENTIAL).
NONSTRUCTURAL PROTEEN NS2 (POTENTIAL).
PROTEASE/HELICASE NS3 (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase; Core protein; Coat protein; Envelope protein; Helicase; ATP-binding; Transmembrane; Nonstructural protein; Hydrolase; Serine protease;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROTEASE/HELICASE NS3 (POTENTIAL).
NONSTRUCTUTURAL PROTEIN NS4A (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
RNA-DIRECTED RNA POLYMERASE (POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                             InterPro, IPR002166; HCV_RdRP.
InterPro, IPR007095; RNA_pol_DS_PS.
InterPro, IPR007094; RNA_pol_PSvir.
                                                                                                                                                                                                                                        HCV_capsid.
                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF01543; HCV_capsid; 1 Pfam; PF01543; HCV_capsid; 1 Pfam; PF01542; HCV_capsid; 1 Pfam; PF01550; HCV_capv; 1. Pfam; PF01550; HCV_capv; 1. Pfam; PF01538; HCV_capv; 1. Pfam; PF01006; HCV_capv; 1. Pfam; PF01001; HCV_capv; 1. Pfam; PF01001; HCV_capv; 1. Pfam; PF00998; Viral_RdRP; 1. ProDom; PD186062; HCV_NS31; 1. ProDom; PD186062; HCV_NS1; 1.
                                                                                                                                                                                                                                                                                                HCV_NS3.
HCV_NS4a.
HCV_NS4b.
                                                                                                                                                                                                                                                     HCV_core.
                                                                                                                                                                                                                                                                HCV_env.
HCV_NS1.
HCV_NS2.
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                                                                             EMBL; M58335; AAA72945.1; -.
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1083
1107
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PDB; 1GX6; 10-APR-02.
PDB; 1QUV; 26-JUN-00.
PDB; 80HM; 20-APR-99.
                                                                                                                                                                                                                                                                                               InterPro; IPR004109;
InterPro; IPR000745;
InterPro; IPR001490;
                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002868;
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                                                                                                                                                                                                                                                                                     InterPro; IPR002518;
                                                                                                                                                                                                                                                     InterPro; IPR002521;
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                                                                                                                                                                                                                                         InterPro; IPR002522;
                                                                                                                                                                                                                                                               InterPro; IPR002519;
                                                                                                                                                                                                       MEROPS; S29.001;
MEROPS; U39.001;
                                                                                          PIR; A38465;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3D-structure.
INIT_MET
                                                                                                                           PDB; 1NS3;
                                                                                                                                                  PDB; 1CSJ;
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ACT_SITE
ACT_SITE
NP_BIND
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                                                                                                                                                                                                                               A Tanaka T., Kato N., Nakagawa M., Ootsuyama Y., Cho M.J.,
Tanaka T., Kato N., Nakagawa M., Ootsuyama Y., Cho M.J.,
A Nakazawa T., Hijikata M., Ishimura Y., Shimucohno K.;
A Nakazawa T., Hijikata M., Ishimura Y., Shimotohno K.;
A Nakazawa T., Hijikata M., Ishimura Y., Shimotohno K.;
Tanaka T., Hijikata M., Commonly With Asp Or Glu in the viral Procursor polyprotein, commonly with Asp Or Glu in the P6
Position, Cys or Thr in Pl and Ser or Ala in Pl'.
CHALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
                      (EC 3.4.22.-); Protease/helicase NS3 (P70) (Hepacivirin) (EC 3.4.21.98); Nonstructural protein NS4A (P4); Nonstructural protein NS5A (P56); No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SMART; SM00487; DEXDc; 1.
Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -i- SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY LIPOPROTEIN BY AND GLYCOPROTEIN E. THE ENVELOPE CONSIGTS OF TWO PROTEINS: PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA.
    GP68) (GP70) (NS1); Protein P7; Nonstructural protein NS2 (P21)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -i - SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY S29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LUCETPTO; IPRO02521; HCV_core.

R InterPro; IPR002519; HCV_core.

R InterPro; IPR002519; HCV_core.

R InterPro; IPR002519; HCV_NS1.

R InterPro; IPR004109; HCV_NS3.

R InterPro; IPR004109; HCV_NS4.

InterPro; IPR004190; HCV_NS4.

InterPro; IPR001490; HCV_NS5.

InterPro; IPR001490; HCV_NS4.

InterPro; IPR007096; HCV_NS7.

InterPro; IPR007095; RNA_pol_DS_PS.

InterPro; IPR007095; RNA_pol_PSvir.

Pfam; PP01539; HCV_core; 1.

Pfam; PP01539; HCV_Core; 1.

Pfam; PP01539; HCV_NS3; 1.

Pfam; PP01539; HCV_NS3; 1.

Pfam; PP01006; HCV_NS3; 1.

Pfam; PP01006; HCV_NS3; 1.

Pfam; PP01001; HCV_NS3; 1.
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PF00271; helicase_C; 1.
PF00998; viral_RdRP; 1.
PD186062; HCV_NS1; 1.
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PDB; 1A1Q; 25-MAR-98.
PDB; 1JXP; 14-JAN-98.
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InterPro; IPR002522;
InterPro; IPR002521;
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                                                                                                                                                                     NCBI_TaxID=31642;
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MEROPS; U39.001;
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    1632 QNEVTLTHPITKYIMACMSADLEVVTSTWVLVGGVLAALAAYCLTTGSVVIVGRIILSGR 1691
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1692 PAIVPDRELLYQEFDEMEECASHLPYIEQGMQLAEQFKQKALGLLQTATKQAEAAAPVVE 1751
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01-APR-1993 (Rel. 25, Last sequence update)
15-SEP-2003 (Rel. 47, Last annotation update)
Genome polyprotein (Contains: Capsid protein C (Core protein) (P22);
Envelope glycoprotein El (GP32) (GP35); Envelope glycoprotein E2
                                                              (POTENTIAL).
(POTENTIAL).
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69.2%; Pred. No. 6.2e-41;
ive 14; Mismatches 27; Indels
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                                                            (GLCNAC.
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N-LINKED
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1203 120
1680 168
3010 AA;
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Q00269;
01-APR-1993 (
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CARBOHYD
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 61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                          CAPSID PROFEEN (POTENTIAL).
MATRIX PROFEIN (POTENTIAL).
MAJOR ENVELORE PROTEIN E (POTENTIAL).
NONSTRUCTURAL PROTEIN NS1/E2 (POTENTIAL).
NON-STRUCTURAL PROTEIN NS2/E2 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
RNA-DIRECTED RNA POLYMERASE (POTENTIAL).
RNA-DIRECTED RNA POLYMERASE (POTENTIAL).
CHARGE RELAX SYSTEM (BY SIMILARITY).
CHARGE RELAX SYSTEM (BY SIMILARITY).
CHARGE RELAX SYSTEM (BY SIMILARITY).
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15-SEP-2003 (Rel. 42, Last annotation update)
66nome polyprotein [Contains: Capsid protein (Core protein) (P22);
66nome polyprotein E1 (GP32) (GP35); Envelope glycoprotein E2
(GP68) (GP70) (NS1); Protein P7: Nonstructural protein NS2 (P21)
(EC 3.4.22.-); Protease/helicase NS3 (P70) (Hepacivirin)
(EC 3.4.21.98); Nonstructural protein NS3A (P56); Nonstructural protein NS3A (P56); Nonstructural protein NS5A (P66); Nonstructural protein NS5A (P66); Nonstructural protein NS5A (P66); Nonstructural protein NS5B (P66) (P70) (RNA-directed RNA polymerase) (EC 2.7.7.48)].
                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
protein; Helicase; ATP-binding;
Envelope protein; Helicase; Alr-Dinul
. protein; Hydrolase; Serine protease;
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                                                                                                                                                                                                                                                                   (POTENTIAL)
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                            PROTEIN C
                                                                                                                                                                                                                                                                                                                                                                                                      26; Indels
                                                                                                                                                                                                                                                                                                                                                                   94A1C77435D642BB CRC64;
                                    CELLULAR AMINOPEPTIDASE.
                            FROM CAPSID
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N-L. 326573 MW; 9
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      Transmembrane; Nonstructural
3D-structure, 1 1
 protein;
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protein; Coat
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between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Chen P.J. Lin M.H., Tai K.F., Liu P.C., Lin C.J., Chen D.S.;

Chen P.J., Lin M.H., Tai K.F., Liu P.C., Lin C.J., Chen D.S.;

Chen P.J., Lin M.H., Tai K.F., Liu P.C., Lin C.J., Chen D.S.;

Chen P.J., Lin M.H., Tai K.F., Liu P.C., Lin C.J., Chen D.S.;

Chen P.J., Lin M.H., Tai Sharin of viral genome: sequence determination and mapping the 5' termini of viral genomic and antigenomic RNA.";

Virology 188:102-113(1992).

-!- FUNCTION THE SMALL PROTEINS NS2A, NS2B, NS4A AND NS4B ARE HYDROPHOBIC, SUGGESTING A POSSIBLE MEMBRANE-RELATED FUNCTION.

NS3 AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION.

-!- CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral postition, Cys or Thr in Pl and Ser or Ala in Pl'.

-!- CATALYTIC ACTIVITY: N nucleoside triphosphate - N diphosphate +
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Core protein; Coat protein; Envelope protein; Helicase; ATP-binding;
Transmembrane; Nonstructural protein; Hydrolase; Serine protease;
   Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY LIPOPPOTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROPEINS: PROPEIN AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA.
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Hepatitis C virus (isolate Taiwan) (HCV).
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HCV_env.
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HCV_NS2.
HCV_NS3.
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HCV_NS4b.
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PF01560; HCV_NS1; 1.
PF02907; HCV_NS3; 1.
PF01006; HCV_NS4s; 1.
PF01001; HCV_NS4s; 1.
PF00271; helicase_C; 1.
PF00271; helicase_C; 1.
PP00271; helicase_C; 1.
PP00271; helicase_C; 1.
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InterPro; IPR002522;
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PDB; 1N64; 25-FEB-03.
PDB; 1NS3; 08-APR-98.
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1692 PAVVPDREVLYQEFDEMEECASHLPYIEQGMQLAEQFRQKALGLLQTATKQAEAAAPVVE 1751
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01-AUG-1992 (Rel. 23, Last sequence update)
01-AUG-1992 (Rel. 21, Last sequence update)
01-AUG-1992 (Rel. 41, Last annotation update)
Genome polyprotein [Contains and the contains and the contains
MAJOR ENVELOPE PROTEIN E (POTENTIAL).
NONSTRUCTURAL PROTEIN NS1/E2 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS2 (POTENTIAL).
PROTEASE/HELICASE NS3 (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
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SEQUENCE FROM N.A.

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           Okamoto H., Okada S.-I., Sugiyama Y., Kurai K., Lizuka H.,
Machida A., Miyakawa Y., Mayumi M.;
Machida A., Miyakawa Y., Mayumi M.;
Machida A., Miyakawa Y., Mayumi M.;
Mucleotide sequence of the genomic RNA of hepatitis C virus isolated
from a human carrier: comparison with reported isolates for conserved
and divergent regions.";
J. Gen. Virol. 72:8697-2704 (1991).
J. Gen. Virol. 72:8697-2704 (1991).
HYDROPHOBIC, SUGGESTING A POSSIBLE MEMBRANE-RELATED FUNCTION.
NS3 AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION.
I- CAPALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral
precursor polyprotein, commonly with Asp or Glu in the P6
position, Cys or Thr in Pl and Ser or Ala in Pl'.
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CAPSID PROTEIN (POTENTIAL).
MARIX PROTEIN (POTENTIAL).
MAJOR ENVELOPE PROTEIN E (POTENTIAL).
NONSTRUCTURAL PROTEIN NSI (POTENTIAL).
NONSTRUCTURAL PROTEIN NSI (POTENTIAL).
PROTESAS/HELICASE NSI (POTENTIAL).
NONSTRUCTURAL PROTEIN NSI (POTENTIAL).
                                                                                                                                                                                                                                                                              SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSIGNS OF TWO PROTEINS: PROPEIN AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Polyprotein; Glycoprotein; Transferase; RNA-directed RNA polymerase; Core protein; Coat protein; Envelope protein; Helicase; APT-binding; Transmembrane; Nonstructural protein; Hydrolase; Serine protease.

INIT_MET 1 REMOVED FROM CAPSID PROTEIN C BY THE
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InterPro; IRR002531; HCV_core.
InterPro; IRR002531; HCV_core.
InterPro; IRR002518; HCV_NS1.
InterPro; IRR004109; HCV_NS2.
InterPro; IRR004109; HCV_NS3.
InterPro; IRR004109; HCV_NS4a.
InterPro; IRR004109; HCV_NS5a.
InterPro; IRR004109; HCV_NS5a.
InterPro; IRR007094; RNA_POL_DS_PS.
InterPro; IRR007094; RNA_POL_PS_Pfam; PF01542; HCV_core; I.
Pfam; PF01542; HCV_core; I.
Pfam; PF01560; HCV_NS2; I.
Pfam; PF01006; HCV_NS3; I.
Pfam; PF01006; HCV_NS4b; I.
Pfam; PF00207; HCV_NS4b; I.
Pfam; PF00201; HCV_NS4b; I.
MEDLINE-92044440; PubMed-1658196;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HCV_capsid.
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HSSP; P27958; 1HEI.
MEROPS; S29.001; -.
MEROPS; U39.001; -.
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01-505. (Rel. 23, Last sequence update)
01-505. (Rel. 23, Last sequence update)
01-505. (Rel. 41, Last annotation update)
60-505. (Rel. 41, Last annotation update)
60-505. (Greb) (Greb)
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NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
RNA DIRECTED RNA POLYMERASE (POTENTIAL)
POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-92230232; PubMed-1314459;
Okamoto H., Kurai K., Okada S.-I., Yamamoto K., Lizuka H., Tanaka
Fukuda S., Tsuda F., Mishiro S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Full-length sequence of a hepatitis C virus genome having poor homology to reported isolates: comparative study of four distinct
                                                                    SIMILARITY).
SIMILARITY).
SIMILARITY).
                                                                                                                                                                                                                                                                                                   (POTENTIAL)
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-!- FUNCTION: THE SMALL PROTEINS NS2A, NS2B, NS4A AND NS4B ARE
                                                                                                                                                                                                                                                                                    (POTENTIAL)
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DECH BOX.
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1091 109
2038 203
2811 281
3033 AA;
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nes 76; Conserv
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P26661;
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                          NS3 AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION. CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the viral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Polyprotein; Glyoprotein; Transferase; RNA-directed RNA polymerase; Core protein; Glyoprotein; Envelope protein; Helicase; APP-binding; Transmembrane; Nonstructural protein; Hydrolase; Serine protease.

INIT_MET 1 DECLULAR AMINOPEPTIDASE.

CHAIN 116 191 MATRIX PROTEIN (POTENTIAL).

CHAIN 192 383 MAJOR ENVELOPE PROTEIN E (POTENTIAL).

CHAIN 384 733 NONSTRUCTURAL PROTEIN BE (POTENTIAL).

CHAIN 734 1010 NONSTRUCTURAL PROTEIN NSI (POTENTIAL).

CHAIN 1011 1619 PROTEASE/HELICASE NS3 (POTENTIAL).
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                                                                                                                                                                                      (RNA)(N).
SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NONSTRUCTURAL PROTEIN NS4A (POTENTIAL).
NONSTRUCTURAL PROTEIN NS4B (POTENTIAL).
                                                                                                                                                                                                                                                 LIPOPROTEIN ENVELOPE, THE ENVELOPE CONSISTS OF TWO PROTEINS: PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA.
                                                                                      precursor polyprotein, commonly with Asp or Glu in the P6 position, Cys or Thr in P1 and Ser or Ala in P1'. CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate
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CHARGE RELAY SYSTEM (BY SIMILARITY).
CHARGE RELAY SYSTEM (BY SIMILARITY).
HYDROPHOBIC, SUGGESTING A POSSIBLE MEMBRANE-RELATED FUNCTION
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N-LINKED (GLCNAC. . .) (POTENTIAL).
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DECH BOX.
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Interpro; IPR007095; RNA_pol_DS_PS.
Interpro; IPR007094; RNA_pol_DS_PS.
Interpro; IPR007094; RNA_pol_DS_PS.
Pfam; PF01543; HCV_core; 1.
Pfam; PF01543; HCV_core; 1.
Pfam; PF01569; HCV_NS1; 1.
Pfam; PF01569; HCV_NS2; 1.
Pfam; PF01006; HCV_NS3; 1.
Pfam; PF01001; HCV_NS4a; 1.
Pfam; PF01001; HCV_NS4b; 1.
Pfam; PF01001; HCV_NS4b; 1.
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InterPro; IPR002513; HCV_NS1.
InterPro; IPR00A518; HCV_NS2.
InterPro; IPR00A109; HCV_NS3.
InterPro; IPR00A149; HCV_NS4a.
InterPro; IPR00A98; HCV_NS4b.
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Pfam; PF00998; Viral_RdRP; 1.
ProDom; PD186062; HCV_NS1; 1.
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HSSP; P27958; 1HEI.
MEROPS; S29.001; -.
MEROPS; U39.001; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               decarboxylase.";
J. Biol. Chem. 263:11516-11522(1988).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: BELONGS TO THE UPF0003 FAMILY. STRONG, TO H.INFLUENZAE H10195.1.
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                      "Structural characterization of Escherichia coli phosphatidylserine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cleves A.E., Cooper D.N., Barondes S.H., Kelly R.B.; "A new pathway for protein export in Saccharomyces cerevisiae.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypothetical protein; Transmembrane; Signal; Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HYPOTHETICAL UPF0003 PROTEIN YJEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1; Length 1107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       38; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              POTENTIAL.
R -> A (IN REF. 1).
W; 5F52A2993B90532B CRC64;
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01-OCT-1996 (Rel. 34, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15; Mismatches
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Pred. No. 7.
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InterPro: IPR006686; MS_channel_dom.
InterPro: IPR006685; MSlon_channel.
Pfam; PF00924; MS_channel; 1.
PROSITE; PS01246; UPF0003; 1.
                                                                                                                                                                                                                                                                                                          EMBL; AE000488; AAC77119.1; -.
EMBL; J03916; AAA83897.1; ALT_INIT.
PIR; E65226; E65226.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Non-classical export protein 3.
NCE103 OR NCE3 OR YNL036W OR N2695.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   123967 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.0%;
26.6%;
                                                                                                                                                                                                                                                                                         EMBL; U14003; AAA97058.1; -.
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       Dowhan W.;
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Best Local Similarity
Matches 25; Conserv
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674
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=K12 / MG1655;
MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Escherichia coli.
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Escherichia.
                                                                                                                           (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
(POTENTIAL).
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                                                                                                                                                                                                                                                                                                                                                             Length 3033;
                                                                                                                                                                                                                                                                                                                                                        60.4%; Score 422; DB 1; Length 30 55.3%; Pred. No. 6.4e-34; ive 24; Mismatches 35; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                        1A173E7E3381FD1A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN=K12 / MG1655;
MEDLINE-95334362; PubMed-7610040;
Burland V.D., Plunkett G. III, Sofia H.J., Daniels D.L.,
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MEDLINE-88298809; PubMed-3042771;
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SWPKLEQFWAKH 1768
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nes 73; Conservative
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Sus scrofa (Pig).
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P10775;
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                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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C. STRAIN-306 / ATCC 13902 / XV 101;

XR MEDLINE-21022145; PubMed=12024217;

An asilva A.C.R., Ferro J.A., Reinach F.C., Farah C.S., Furlan L.R.,

An aliva L.M.C., do Amaral A.M., Bertolini M.C., Canargo L.E.A.,

Andres L.M.C., do Amaral A.M., Bertolini M.C., Canargo L.E.A.,

A classification of Cannavan F., Cardozo J., Chambergo F., Ciaplina L.P.,

A cicarelli R.M.B., Countinho L.L., Cursino-Santos J.R., El-Dorry H.,

Ratia J.B., Ferreira A.J.S., Ferreira R.C.C., Ferro M.I.T.,

RATSUYAMA A.M., Kishi L.T., Leite R.P., Lemos E.G.M., Lemos M.V.F.,

A Katsuyama A.M., Kishi L.T., Leite R.P., Lemos E.G.M., Lemos M.V.F.,

A Locali E.C., Machado M.A., Madeira A.M.B.N., Martinez-Rossi N.M.,

Martins E.C., Meidanis J., Menck C.F.M., Miyaki C.Y., Moon D.H.,
                                                                                             -!- FUNCTION: INVOLVED IN A NOVEL PATHWAY OF EXPORT OF PROTEINS THAT LACK A CLEAVABLE SIGNAL SEQUENCE. APPEARS TO ENCODE AN ENDOGENOUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria; Gammaproteobacteria; Xanthomonadales;
                                                                                                                              NON-CLASSICAL EXPORT SUBSTRATE.
SIMILARITY: BELONGS TO THE PLANT AND PROKARYOTIC CARBONIC
ANHYDRASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-FEB-2003 (Rel. 41, Created)
8-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
UDP-3-0-[3-hydroxymyristoy1] glucosamine N-acyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10.4%; Score 73; DB 1; Length 221; 24.7%; Pred. No. 3.7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41; Indels
                                              Duesterhoeft A., Floeth M., Fritz C., Heuss-Neitzel D.,
Hilbert H., Moestl D.;
Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro: irrocar; 1.
Pfau; PF00484; Pro_CA; 1.
PROSITE: PS00704; PROK CO2_ANHYDRASE_1; FALSE_NEG.
PROSITE: PS00705; PROK_CO2_ANHYDRASE_2; FALSE_NEG.
PROSITE: PS00705; PROK_CO2_ANHYDRASE_2; FALSE_NEG.
CONFLICT 39 39 L > W (IN REF. 1).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           130 PKVNCSHLYKYLDDIDTMYHE---ESQNLIHLKTQRE 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14; Mismatches
                                                                                                                                                                                                                                                                                                or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kanthomonas axonopodis (pv. citri).
Cell Biol. 133:1017-1026(1996)
                                                                                                                                                                                                                                                                                                                                                              PIR; S62958; S62958.
SGD; S0004981; NCE103.
GO; GO:0005737; C:cytoplasm; IDA.
InterPro; IPR001765; Prok_Coanhd.
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                                 SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96
Moreira L.M., Novo M.T.M., Okura V.K., Oliveira M.C., Oliveira V.R., Pereira H.A., Rossi A., Sena J.A.D., Silva C., de Souza R.F., Spinola L.A.F., Takita M.A., Tamura R.E., Teixeira E.C., Tezza R.I.D., Trindade dos Santos M., Truffi D., Tsai S.M., White F.F., Setubal J.C., Kitajima J.P., "Comparison of the genomes of two Xanthomonas pathogens with differing
                                                                                                                                                                                       glucosamine +
UDP-2,3-bis(3-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         37 AALAAYCLSVGCVVIVGHIELGGKPAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQ
                                                                                                                                       Hofsteenge J., Kieffer B., Matthies R., Hemmings B.A., Stone S.R.; "Amino acid sequence of the ribonuclease inhibitor from porcine liver reveals the presence of leucine-rich repeats."; Biochemistry 27:8537-8544(1988).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Transferase; Acyltransferase; Lipid A biosynthesis; Lipid synthesis;
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MEDLINE-91104783; PubMed-2271559;
WICHIE-91104783; PubMed-2271559;
Vicentini A.M., Kieffer B., Matthies R., Meyhack B., Hemmings B.A., Stone S.R., Hofsteenge J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Euteleostomi;
Sus.
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Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;
NCBL_TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HAMAP; MF_00523; -; 1.
InterPro; IPR001451; Hexapep_transf.
Pfam; PF0012; hexapep; 8.
Pfam; PF04613; LpxD; 1.
PROSITE; PS00101; HEXAPEP_TRANSFERASES; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUL-1989 (Rel. 11, Created)
01-JUL-1989 (Rel. 11, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Ribonuclease inhibitor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Pred. No. 8.2;
11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10.2%; Score 71.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-89118268; PubMed-3219361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AE011772; AAM36282.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 82-456 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Repeat; Complete proteome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97 FKGKVLGLLQR 107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 317 ARFKQLDVLAR 327
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity
                                                                                                                                                                                                                                                                                                     LPXD SUBFAMILY.
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01-A0G-1991 (Rel. 19, Created)
01-A0G-1991 (Rel. 19, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Trifunctional purine biosynthetic protein adenosine-3 [Includes: Phosphoribosylamine--glycine ligase (EC 6.3.4.13) (GARS) (Glycinamide
                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 EIC--LTHPITKYIMACMSADLEVTTSTWVLLGGVLAA---LAAYCLSVGCVVIVGHIEL
                                                                                                                                                                                                                                                                                                                                                                                                                           Length 456;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                           49023 MW; 01DA0A529CDC763E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                          10.2%; Score 71.5; DB 1; ilarity 34.1%; Pred. No. 11; Conservative 13; Mismatches 36;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT; 1010 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           58 GG---KPAIVPDKEVLYQQY---DEMEECSQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                   453 4
456 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
                                                                                                                                                                  Query Match
Best Local Simi
Matches 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PUR2_HUMAN
ID PUR2_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                   STRAND
SEQUENCE
          RESULT 13
   g
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                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
"Protein chemical and kinetic characterization of recombinant porcine ribonuclease inhibitor expressed in Saccharomyces cerevisiae."; Blochemistry 29:8827-8834(1990).
                                                                                     X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
MEDLINE-95183144; PubMed-7877692;
Kobe B., Delsenhofer J.;
A structural basis of the interactions between leucine-rich repeats and protein ligands.";
Nature 374:183-186(1995).
I-FUNCTION: INHIBITOR OF PANCREATIC RNASE AND ANGIOGENIN. MAY ALSO FUNCTION: INHIBITOR OF PANCREATIC RNASE AND THE STATES.
SUBUNIT: FORMS A TIGHT ONE-TO-ONE COMPLEX WITH THE RNASE.
SUBCELLULAR LOCATION: Cytoplasmic.
SIMILARITY: Contains 15 leucine-rich (LRR) repeats.
                               X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).
MEDLINE-94088748; PubMed-8264799;
Kobe B., Delscanhofer J.;
MCrystal structure of porcine ribonuclease inhibitor, a protein with leuchne-rich repeats."
Nature 366:751-756(1993).
                                                                                                                                                                                                                                                                                                                                 rich repeat; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACETYLATION
                                                                                                                                                                                                                                                    EMBL; M58700; AAA63448.1; -
PIR; A31857; A31857.
PDB; 2BNH; 12-MAR-97.
INTERPTO; IPR001611; LRR.
INTERPTO; IPR001611; LRR.
INTERPTO; IPR001509; LRR_RNINh.
INTERPTO; IPR001509; LRR_RNINh.
EFAM; PR00560; LRR. 5.
SWART; SW00368; LRR_RI; 2.
ACETJATION; Repeat; Leucine-rich reperperation; Repeat; Leucine-rich reperpeat 44 71 LRR 81.
REPEAT 12 100 LRR 82.
REPEAT 129 157 LRR 82.
REPEAT 129 157 LRR 83.
                                                                                                                                                                                                                                                                                                                                         LER A1.
LER B1.
LER B2.
LER B3.
LER B3.
LER B4.
LER B4.
LER B4.
LER B5.
LER B5.
LER B6.
LER B6.
LER B6.
LER B6.
LER B6.
LER B7.
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REPEAT
MOD_RES
STRAND
STRAND
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TURN
HELIX
TURN
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HELIX
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REPEAT
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REPEAT
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REPEAT
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TURN
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5;

Gaps

11;

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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MIM; 138440; -. GC:0004644; F:phosphoribosylglycinamide formyltransferase. . .; TAS. InterPro; IPR00728; AIRS_related. InterPro; IPR002376; formyl_transf.
                                                                                                                                                                                                                                                                   -1- SIMILARITY: IN THE N-TERMINAL SECTION; BELONGS TO THE GARS FAMILY.
ribonucleotide synthetase) (Phosphoribosylglycinamide synthetase);
Phosphoribosylformylglycinamidine cyclo-ligase (EC 6.3.3.1) (AIRS)
(Phosphoribosyl-aminoimidazole synthetase) (AIR synthase);
Phosphoribosylglycinamide formyltransferase (EC 2.1.2.2) (GART) (GAR transformylase) (5'-phosphoribosylglycinamide transformylase)].
                                                                                                                                        MEDLINE=91067455; PubMed=2147474;
Aimi J., Qiu H., Williams J., Zalkin H., Dixon J.E.;
Aimi D., Qiu H., Williams J., Zalkin H., Dixon J.E.;
The novo purine nucleotide biosynthesis: cloning of human and avian cDNAs encoding the trifunctional glycinamide ribonucleotide synthetase-aminoimidazole ribonucleotide synthetase-aminoimidazole ribonucleotide
                                                                           Homo Sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                        ю.
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                                                                                                                                                                                                                       ribonucleotide transformylase by functional complementation in
                                                                                                                                                                                                                                                                                                                                                                                                                                                   -!- PATHWAY: SECOND, THIRD AND FIFTH STEPS IN DE NOVO PURINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Event=Alternative splicing; Named isoforms=2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IsoId=P22102-2; Sequence=VSP_005517;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  IsoId-P22102-1; Sequence-Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                             Nucleic Acids Res. 18:6665-6672(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Interpro; IPR004733; PurM_cligase.
Interpro; IPR004607; PurN.
Pfam; PF00586; AIRS; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            formyl_transf; 1.
GARS; 1.
GARS_B; 1.
GARS_C; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; X54199; CAA38119.1; -. EMBL; M32082; AAA60077.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IPR001555; GART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AIRS_C; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Genew; HGNC:4163; GART.
                                                                                                                                                                                                                                                                                                                                                                                                                                         ribosyl) imidazole.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PIR; S12616; AJHUPR.
HSSP; P15640; 1GSO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BIOSYNTHESIS.
                                                                                                                  NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Name=Short;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PF02843;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PF02842;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Name-Long;
                                                                   GART OR PRGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  efam;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam;
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                                                                                                                                                                                                                                                                                                                                                                                                                   75
                                                                                                                                                                                                                                                                                                                                                                                                                   16 ACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGKPAIVPDKEVLYQQYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fur family member.";
J. Bacteriol. 181:2102-2109(1999).
-!- FUNCTION: TRANSCRIPTIONAL ACTIVATOR OF GENES FOR THE ANAEROBIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIINE-97322399; PubMed-9177244;
Egland P.G., Pelletier D.A., Dispensa M., Gibson J., Harwood C.S.;
"A cluster of bacterial genes for anaerobic benzene ring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          an
                                TIGRFAMS; TIGROUDS; ...
PROSITE; PS00184; GARS; 1.
PROSITE; PS00373; GART; 1.
PROSITE; PS00373; GART; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIINE-99194718; PubMed-10094687;
Egland P.G., Harwood C.S.;
"BadR, a new MarR family member, regulates anaerobic benzoate
degradation by Rhodopseudomonas palustris in concert with AadR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEGRADATION OF BENZOATE.
-!- SIMILARITY: BELONGS TO THE MARR FAMILY OF TRANSCRIPTIONAL REGULATORS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   16-ocr-2001 (Rel. 40, Last sequence update)
16-ocr-2001 (Rel. 40, Last annotation update)
Transcriptional activatory protein badR (Benzoate anaerobic
degradation regulator).
                                                                                                                                                                                                                                                                                                                                                 10.2%; Score 71; DB 1; Length 1010; 27.0%; Pred. No. 29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rhodopseudomonas palustris.
Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Bradyrhizobiaceae; Rhodopseudomonas.
                                                                                                                                                                                             /FTIG=VSP_005517.

L > F (IN dbSNP:1804387).

/FTIG=VAR_011817.

/FTIG=VAR_011818.

D -> G (IN dbSNP:8971).
                                                                                                                                                                                                                                                                                                 /FTId-VAR_011819.
W; 9A4213F746EB17A2 CRC64;
                                                                                                                                                                                   (in isoform Short).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   76 EMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVI 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  582 EYDLAGFAVGAMERDQKLPH-----LERITEGDVVV
                                                                                                                                                                                                                                                                                                                                                                                  32;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Proc. Natl. Acad. Sci. U.S.A. 94:6484-6489(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   175 AA
                                                                                                                                                                   BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                  15; Mismatches
                                                                                                                                                                                 Missing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-OCT-2001 (Rel. 40, Created)
                                                                                                                                                                                                                                                                                                                    1010 AA; 107767
TIGRFAMS; TIGROO877; purD;
TIGRFAMS; TIGROO878; purM;
TIGRFAMS; TIGROO639; PurN;
                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 27.0 nes 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STANDARD;
                                                                                                                 433
809
1010
951
1010
                                                                                                                                                                                                                                                                                  752
                                                                                                                                                                                                                                                 421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=1076;
                                                                                                                                                  810
                                                                                                                                                                                                                                                                                   752
                                                                                                                                                                                                                    21
                                                                                                                                                                                                                                                 421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-CGA009;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BADR_RHOPA
                                                                                                                                                                   ACT_SITE
VARSPLIC
                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                  VARIANT
                                                                                                                                                                                                                    VARIANT
                                                                                                                                                                                                                                                   VARIANT
                                                                                                                 DOMAIN
                                                                                                                                    DOMAIN
                                                                                                                                                    DOMAIN
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modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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        as its content is in no way
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A Silva A.C.R., Ferro J.A., Reinach F.C., Farah C.S., Furlan L.R.,
A Quagio R.B., Monteiro-Vitorello C.B., Van Sluys M.A., Almedda N.F.,
A Laves L.M.C., Cannavan F., Cardozo J., Chambergo E.E.A.,
Camarotte G., Cannavan F., Cardozo J., Chambergo F., Ciapina L.P.,
Cicarelli R.M.B., Coutinho L.L., Cursino-Santos J.R., El-Dorry H.,
Faria J.B., Ferreira A.J.S., Ferreira R.C.C., Ferro M.I.T.,
Romighleri E.F., Franco M.C., Greggio C.C., Gruber A.,
Katsuyama A.M., Kishi L.T., Leite R.P., Lemos E.G.M., Lemos M.V.F.,
Locall E.C., Machado M.A., Madeira A.M.B.N., Martinez-Rossi N.M.,
Martins E.C., Meidanis J., Menck C.F.M., Miyaki C.Y., Moon D.H.,
Moreira L.M., Novo M.T.M., Okura V.K., Oliveira M.C., Oliveira V.R.,
Spinola L.A.F., Taskita M.A., Tamura R.E., Teixeira E.C., Tezza R.I.D.,
Spinola L.A.F., Taskita M.A., Tamura R.E., Teixeira E.C., Tezza R.I.D.,
Sctubal J.C., Kitajima J.P.;
                                                                                                                                                                                                                                                                                                                                                                                                             :|| | :|| ; | | :|||;
47 LTTQQWAVLGALSRPTVANGMSVGDLARYLMVSRQNLTGLIGRMERDGHVAVVPDER--- 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'Comparison of the genomes of two Xanthomonas pathogens with differing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -1- CATALYTIC ACTIVITY: UDP-3-O-(3-hydroxytetradecanoyl)glucosamine + (R)-3-hydroxytetradecanoyl-[acyl-carrier protein] = UDP-2,3-bis(3-hydroxytetradecanoyl)glucosamine + [acyl-carrier protein].
-1- PATHWAY: Lipid A biosynthesis; third step.
-1- SIMILARITY: BELONGS TO THE TRANSFERASE HEXAPEPTIDE REPEAT FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                  24 VTTSTWVLLGGVLAALAAYCLSVGCVV------IVGHIELGGKPAIVPDKEVLY
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                             17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xanthomonas campestris (pv. campestris).
Bacteria; Proteobacteria; Gammaproteobacteria; Xanthomonadales;
                                                                                                                                                                                                                                                                                                       DB 1; Length 175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
UDP-3-0-[3-hydroxymyristoyl] glucosamine N-acyltransferase (EC 2.3.1.-).
                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                           Transcription regulation; Activator; DNA-binding.
SEQUENCE 175 AA; 19519 MW; 6BEC68C23E9B0DC6 CRC64;
                                                                                                                                                                                                                                                                                                                                           35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              72 QQYDEMEECSQAAPYIEQ -- AQVIAHQFKGKVLG 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF01047; MarR; 1.
PRINTS; PR00598; HTHMARR.
SANO137; HTH_MARR; 1.
PROSITE; PS01117; HTH_MARR_FAMILY; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         337 AA.
                                                                                                                                                                                                                                                                                                     10.1%; Score 70.5; D 23.4%; Pred. No. 5.2;
                                                                                                                                                                                                                                                                                                                                             20; Mismatches
non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last seq
28-FEB-2003 (Rel. 41, Last anno
                                                                                                                     T51765; T51765.
rPro; IPR000835; HTH_MarR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; Gam
Xanthomonadaceae; Xanthomonas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN=ATCC 33913 / NCPPB 528
                                                                                                     EMBL; U75363; AAC23923.1; -.
                                                                                                                                                                                                                                                                                                                                           22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nature 417:459-463(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    host specificities
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                                                                                                                                              InterPro;
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LPXD_XANCP
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use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.lsb-slb.ch/announce/or send an email to license@isb-slb.ch).
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                                                                                                                                                                                                                                                                                                                                                                   37 AALAAYCLSVGCVVIVGHIELGGKPAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQ
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Transferase; Acyltransferase; Lipid A biosynthesis; Lipid synthesis;
restrictions
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                                                                                                                                                                                                                                                                          Length 337;
                                                                                                                                                                                                                                                                                                           39; Indels
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SEQUENCE 337 AA; 34804 MW; 02B8DF4D5DD2283F CRC64;
the European Bioinformatics Institute. There are no
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                                                                                                                 HAMAP; MF_00523; -; 1.
InterPro; IPR001451; Hexapep_transf.
Pfam; PF00132; hexapep; 8.
Pfam; PF04613; LpxD; 1.
                                                                                                    EMBL; AE012235; AAM40661.1;
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MEDLINE=93249436; PubMed=7683463; Stuyver L., Arnhem W.V., Wyseur A., Deleys R., Maertens G.;

Stuyver L., Arnhem W.V., Wyseur A., Deleys R., Maertens G.;

Analysis of the putative El envelope and NS4a epitope region of HCV
type 3.";

Biochem. Biophys. Res. Commun. 192:635-641(1993).

Biochem. Biophys. Res. Commun. 192:635-641(1993).

HSSP: P27958; 1HEI.

MEROPS; S29:001; --

MEROPS; U39:001; --
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Hepacivirus.
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23408 MW; 76648D9BBLD3CD12 CRC64;
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01, Last sequence update)
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Q9WLK8
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01-NOV-1996 (TrEMBLrel. 01, Last s
01-MAR-2003 (TrEMBLrel. 23, Last s
Nonstructural protein 4 (Fragment)
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Pfam; PF01006; HCV_NS4a; 1.
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O568239
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                                GenCore version 5.1.6
Copyright (c) 1993 - 2003 Compugen Ltd.
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sp_unclassified:*
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Maximum DB :
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HCV_capsid.
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InterPro; IPR005252; HCV_capsi
InterPro; IPR005251; HCV_core.
InterPro; IPR002519; HCV_core.
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Pfam; PF00998; Viral_RdRP; 1.
ProDom; PD186062; HCV_NS1; 1.
                                                                      121 TNWQKLEAFWHKH 133
                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                     Hepatitis C virus.
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1638 QNEICLSHPITKYVMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK 1697
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Shukla D.D., Chaturvedi S., Cao J.Y., Hoyne P.A.;
"Complete Nucleotide Sequence of the genome of Hepatitis C Virus type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
                                                                                                                                                                                                                                                                                              Submitted (FEB-1998) to the EMBL/GenBank/DDBJ databases.
--- SUBUNT: THE VIRION OF THIS VIROS IS A NUCLEOCAPSID COVERED BY A LIPOPROTEIN ENVELOPE. THE SIVELOPE CONSISTS OF TWO PROTEINS:
PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF EMBL; AFO46866; AAC03058.1;
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HSSP; P27958; 1HEI.
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PROSITE; PS50507; RDRP_POSITIVE; 1.

COAT PROSITE; PS50521; RORP_VIRAL; 1.

COAT Protein; Envelope protein; Glycoprotein; Nonstructural protein;

Polyprotein; RNA-directed RNA polymerase; Transferase; Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                            Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                               PRT; 3021 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR002519; HCV_env.
InterPro; IPR002519; HCV_env.
InterPro; IPR002519; HCV_NS1.
InterPro; IPR00199; HCV_NS3.
InterPro; IPR00109; HCV_NS4.
InterPro; IPR00109; HCV_NS4.
InterPro; IPR00109; HCV_NS5A.
InterPro; IPR001096; HCV_NS5A.
InterPro; IPR001096; HCV_NS5A.
InterPro; IPR001094; RNA_POL_PSVIr.
Pfam; PF01543; HCV_capsid; 1.
Pfam; PF01593; HCV_capsid; 1.
Pfam; PF01599; HCV_env; 1.
Pfam; PF01597; HCV_env; 1.
Pfam; PF01506; HCV_NS1; 1.
Pfam; PF01006; HCV_NS1; 1.
Pfam; PF01006; HCV_NS3; 1.
Pfam; PF01006; HCV_NS3; 1.
Pfam; PF01006; HCV_NS3; 1.
Pfam; PF01006; HCV_NS4; 1.
Pfam; PF01006; HCV_NS3; 1.
                                                                                                                                      Created)
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HCV_core.
                                                                                                                                  01-NOV-1998 (TrEMBLrel. 08, 01-NOV-1998 (TrEMBLrel. 08, 01-MAR-2003 (TrEMBLrel. 23,
                                 121 TNWOKLEAFWHKH 133
                                              InterPro; IPR001410; DEAD.
InterPro; IPR002522; HCV_c
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Best Local Similarity 95.55
Matches 127; Conservative
                                                                                                               PRELIMINARY;
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                                                                                                                                                                        Genome polyprotein.
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                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                   virus
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1698 PALVPDKEVLYQQYDEMEECSQAAPXIEQAQAIAHQFKEKVLGLLQRATQQQAVIEPIVA 1757
61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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Seelig R., Weber P., Seeling H.P., Ledger N., Bottner C., Renz M.;
Seelig R., Weber P., Seeling H.P., Ledger N., Bottner C., Renz M.;
"Hepatitis C virus type V genome isolated from a patient in Germany.";
Submitted (JAN-1995) to the EMBL/GenBank/DDBJ databases.
-!- SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A
LIPOPROTEIN BANELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS:
PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF
ROTEIN C AND MARA (BY SIMILARITY).

EMBL; X76918; CAA54244.1; -
HISSP; P27958; LALV.
MEROPS; S29.001; -
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01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Genes for core, envelope and NS1 proteins (Genome polyprotein).
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us-09-638-693-36.rspt

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SEQUENCE FROM N.A.
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1664
1718
1979
                                                                                                                                             SEQUENCE
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Q81595;
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                                                                  1638 QNETCLTHPVTKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK 1697
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                                                         1 QNEICLTHPITKYIMACMSADLEVITSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
                                          Gaps
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                                                                                                                                                                                                                                                                                                                                                Submitted (JUL-1994) to the EMBL/GenBank/DDBJ databases.
-!- SUBUNIT: THE VIRION OF THIS VIRAS IS A NUCLECCAPSID COVERED BY LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: PROTEIN MAND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA (BY SIMILARITY).
EMBL; D17763; BAA04609.1; -.
HSSP; P27958; 1HEI.
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                        Length 3021;
                                          4; Indels
       3021 AA; 329092 MW; BF2B499AA55A58CF CRC64;
                                                                                                                                                                                                                                                                                                Okamoto H.; submitted (SEP-1993) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                       Score 674; DB 12;
Pred. No. 2.4e-62;
                                                                                                                                                                                     PRT; 3021 AA
                                        2; Mismatches
NS5B PROTEIN
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InterPro; IPR07094; RNA_pol_PSvir.
Pfam; PF01243; HCV_capsid; 1.
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HCV_core.
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HCV_NS3.
HCV_NS4a.
HCV_NS4b.
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HCV_RdRP.
                       96.4%;
95.5%;
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                                                                                                                                    1758 TNWQKLEAFWHKH 1770
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HCV_NS4a; 1.
HCV_NS4b; 1.
HCV_NS5a; 1.
                                                                                                                           121 TNWOKLEAFWHKH 133
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                                        Matches 127; Conservative
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3021
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IPR002531; H
IPR002518; H
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IPR002521;
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                                 Similarity
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PF01506;
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Sakamoto M.;
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InterPro;
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       SEQUENCE
                       Query Match
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Q81258;
CHAIN
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1638 QNETCLTHPITKYLMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELEGK 1697
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Pfonn; PF00998; Viral_RdRP; 1.
Probom; PD186062; HCV_NS1; 1.
SMART; SM00487; DEXDc; 1.
PROSITE; PS00435; PEROXIDASE_1; 1.
PROSITE; PS50577; RDRP_POSITIVE; 1.
PROSITE; PS50521; RDRP_VIRAL; 1.
Coat protein; Envelope protein; Glycoprotein; Nonstructural protein;
POlyprotein; RNA-directed RNA polymerase; Transferase; Transmembrane.
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Stuyver L., Arnhem W.V., Wyseur A., Deleys R., Maertens G.;
"Analysis of the putative El envelope and NS4a epitope region of HCV
type 3.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         329574 MW; 38712CCBC0C19562 CRC64;
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01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Nonstructural protein 4 (Fragment).
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EMBL; D14602; BAA03451.1; --
HSSP; P27958; 1HEI.
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3; Mismatches
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                                                                                                                                                                                                                                                                                                  NS3.
NS4A.
NS4B.
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Best Local Similarity 95.5%;
Matches 127; Conservative
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Matches 124; Conservative
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NON_TER 133 133

SEQUENCE 133 AA; 14781 M
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1978
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3021
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MEROPS; S29.001; -. MEROPS; U39.001; -.
                             Date T.;
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Q68241;
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61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                     Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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Hepacivirus.
                                                                                                                                                                                                                 Greene W.K., Cheong M.K., Ng V., Yap K.W.;
"Prevalence of hepatitis C virus sequence variants in South-East
Asia.";
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                                                                                                                                                                                                                                                                                                                          95.3%; Score 666; DB 12; Length 138; 93.2%; Pred. No. 4e-63; Live 5; Mismatches 4; Indels
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                                                                                                                                                                                                                                                                                                           138 AA; 15379 MW; 45236C0E5427B19F CRC64;
                                                                                                    01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
NonStructural protein (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
                                                                                      138 AA
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                                                                                      PRT;
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                                                                                                                                                                                                                                            J. Gen. Virol. 76:211-215(1995).
EMBL; U14269; AAC53958.1; -.
HSSP; P27958; 1HEI.
InterPro; IPR000745; HCV_NS4a.
Pfam: PF01006; HCV_NS4a; 1.
                                   :|||||| |||||
121 SNWQKLETFWHKH 133
                        121 TNWOKLEAFWHKH 133
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Best Local Similarity 93.2
Matches 124; Conservative
                                                                                      PRELIMINARY;
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SEQUENCE FROM N.A.
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         61
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Q81495;
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1638 QNEICLTHPITKYVMACMSADLEVTTSTWVLLGGVLAAVAAYCLSVGCVVIVGHIELGGK 1697
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                          Yamada N., Manihara K., Mizokami M., Ohba K., Takada A., Tsutsumi M.,
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PROSITE; PS50507; RDRP_POSITIVE; 1.
PROSITE; PS50507; RDRP_VIRAL; 1.
COAT protein; Envelope protein; Glycoprotein; Nonstructural protein;
Polyprotein; RNA-directed RNA polymerase; Transferase; Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                    comparative study with different genotypes.";
comparative study with different genotypes.";
-!- SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF EMBL; D28917; BAA06044.1; -. HSSP; P27958; THEI.
                                                                            "Full-length sequence of the genome of hepatitis C virus type 3a:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Nonstructural protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 94.6%; Score 661; DB 12; 1
Best Local Similarity 93.2%; Pred. No. 5.8e-61;
Matches 124; Conservative 4; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Æ
                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001410; DEAD.
InterPro; IPR001521; HCV_capsid.
InterPro; IPR002521; HCV_care.
InterPro; IPR002531; HCV_env.
InterPro; IPR002519; HCV_env.
InterPro; IPR002519; HCV_NS1.
InterPro; IPR001409; HCV_NS3.
InterPro; IPR001409; HCV_NS4.
InterPro; IPR001409; HCV_NS4b.
InterPro; IPR001409; HCV_NS4b.
InterPro; IPR001409; HCV_RAP.
InterPro; IPR001049; HCV_RAP.
InterPro; IPR001049; RNA_pol_DS_PS.
InterPro; IPR007099; RNA_pol_PSvir.
Pfam; PF01543; HCV_env; 1.
Pfam; PF01543; HCV_env; 1.
Pfam; PF01509; HCV_NS1; 1.
Pfam; PF01509; HCV_NS1; 1.
Pfam; PF01006; HCV_NS4a; 1.
Pfam; PF01006; HCV_NS4b; 1.
Pfam; PF01006; HCV_NS4b; 1.
Pfam; PF01006; HCV_NS4b; 1.
Pfam; PF01006; HCV_NS4b; 1.
MEDLINE-95053917; PubMed-7964640;
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1758 SNWOKLEVLWHKH 1770
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60 QNEICTTHPVTKYIMACMSADLEVTTSTWVILGGVLAALAAYCLSVGCVVIIGHIELGVK 119
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                                                                                                                                                                                                                                                                                                                                        Hepatitis C virus type 3.
Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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Hepacivirus.
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Panigrahi A.K., Panda S.K.;
Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AF042791; AAB97852.1;
HSSP; P27958; 1HEI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          21493 MW; AF7B8E3FB3B69505 CRC64;
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Last sequence update)
Last annotation update)
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Last annotation update)
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88.1%; Score 616; DB 12;
Best Local Similarity 84.2%; Pred. No. 1.3e-57;
Matches 112; Conservative 13; Mismatches 8;
                                                                                                                                                                                                                         193 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT; 3023 AA.
                                                                                                                                                                                                                                                                 Created)
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Interpro; IPR000745; HCV_NS4a.
Pfam; PF01006; HCV_NS4a; 1.
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Q81487;
01-NOV-1996 (TTEMBLTE1. 01,
01-NOV-1996 (TTEMBLTE1. 01,
01-MAR-2003 (TTEMBLTE1. 23,
                                                                                                      126 PTWOKLETFWHKH 138
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SHWQKLEAFWHKH 192
                                                                               121 TNWOKLEAFWHKH 133
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                                                                                                                                                                                                                         PRELIMINARY;
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                                                                                                                                                                                                                                                              01-JUN-1998 (TrEMBLrel.
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Hepatitis C virus t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          193 AA;
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SEQUENCE
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081487
AC 08148
AC 08148
AC 08148
DJT 01-NO
DJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK 60
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                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
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Viruses: ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus
  Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=33;
MEDLINE-95146953; PubMed-7844535;
Greene W.K., Cheong M.K., Ng V., Yap K.W.;
"Prevalence of hepatitis C virus sequence variants in South-East
                                                                                                                                       Greene W.K., Cheong M.K., Ng V., Yap K.W.;
"Prevalence of hepatitis C virus sequence variants in South-East
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                                                                                                                                                                                                                                                                                                                                                                                   Length 138;
                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                         NON_TER 138 138 SEQUENCE 138 As; 15277 MW; 275F2F928F5A10E4 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Nonstructural protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                 93.6%; Score 654; DB 12;
92.5%; Pred. No. 7.6e-62;
tive 4; Mismatches 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          138 AA.
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                                                                                                                                                                                              J. Gen. Virol. 76:211-215(1995).
EMBL, U14277; AAC53966.1; -.
HKSP; P27958; 1HEI.
INTERPRO 1 PROMOTA5; HCV_NS4a.
Pfam; PF01006; HCV_NS4a; 1.
NON_TER 13 13
                                                                                                                     MEDLINE-95146953; PubMed-7844535;
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EMBL: 014275; AAC53964.1; -.
HSSP: P27958; 1HEI.
InterPro; IPR000745; HCV_NS4a.
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126 TTWOKLETFWHKH 138
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                                                                                                                                                                                                                                                                                                                                                                                                      Best_Local Similarity 92.5
Matches 123; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 92.5
Matches 123; Conservative
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                                                                           SEQUENCE FROM N.A.
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                                   NCBI_TaxID=11103;
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SEQUENCE
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                                                                                                                                                                                 Asia.";
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61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
                                                              1 ONEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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PROSITE; PS50507; RDRP_POSITIVE; 1.
PROSITE; PS5051; RDRP_VIRAL; 1.
Coat protein; Envelope protein; Glycoprotein; Nonstructural protein;
POLYprotein; RNA-directed RNA polymerase; Transferase; Transmembrane, SEQUENCE 3019 AA; 328210 WW; AR7A6774BC6D95FA CRC64;
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(TrEMBLrel. 01, Last sequence update)
(TrEMBLrel. 19, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR002531; HCV_NS1.
InterPro; IPR002531; HCV_NS2.
InterPro; IPR002531; HCV_NS2.
InterPro; IPR001409; HCV_NS3.
InterPro; IPR001490; HCV_NS4.
InterPro; IPR001490; HCV_NS4b.
InterPro; IPR001666; HCV_RGAP.
InterPro; IPR001917; NHCRANS_2.
InterPro; IPR001917; NHCRANS_2.
InterPro; IPR001917; NHCRANS_1.
InterPro; IPR001904; RNA_POl_DS_PS.
InterPro; IPR001904; RNA_POl_DS_PS.
InterPro; IPR001904; RNA_POl_DS_PS.
InterPro; IPR001904; RNA_POl_DS_PS.
InterPro; IPR001904; RNA_POl_PSV1r.
Pfam; PF01543; HCV_Core; 1.
Pfam; PF01550; HCV_NS1; 1.
Pfam; PF01550; HCV_NS1; 1.
Pfam; PF01538; HCV_NS3; 1.
                                    MEDLINE-96226020; PubMed-8627233;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002522; HCV_capsid_
InterPro; IPR002521; HCV_core.
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Pfam; PF01001; HCV_NS4b; 1.
Pfam; PF01506; HCV_NS5a; 1.
Pfam; PF00998; Viral_RdRP; 1.
ProDom; PO186062; HCV_NS1; 1.
SMART; SM00487; DEXDC; 1.
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Matches 104; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001410;
InterPro; IPR002522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEROPS; $29.001;
MEROPS; U39.001;
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01-NOV-1996
01-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
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Q68223;
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         RAMEN OF THE STATE OF THE STATE
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                                                                               MEROPS; U39.001; -.

DR InterPro; IPR00151; -.

DR InterPro; IPR00252; HCV_capsid.

InterPro; IPR00252; HCV_capsid.

InterPro; IPR00251; HCV_capsid.

InterPro; IPR00251; HCV_NS1.

INTERPRO; IPR001519; HCV_NS2.

INTERPRO; IPR001409; HCV_NS3.

INTERPRO; IPR001409; HCV_NS4.

INTERPRO; IPR001409; HCV_NS4.

INTERPRO; IPR001516; HCV_NS4.

INTERPRO; IPR001516; HCV_NS4.

INTERPRO; IPR001516; HCV_NS4.

INTERPRO; IPR001516; HCV_NS4.

INTERPRO; IPR001509; RNA_POI_DS_PS.

INTERPRO; IPR001509; HCV_Capsid; 1.

Pfam; PF01542; HCV_Capsid; 1.

Pfam; PF01559; HCV_NS1; 1.

Pfam; PF01560; HCV_NS3; 1.

Pfam; PF01001; HCV_NS4; 1.

PFam; PF01001; HCV_NS4; 1.

PFam; PF01001; HCV_NS5; 1.

PFam; PF01001; HCV_NS5; 1.

PR00m; PD186062; HCV_NS5; 1.

PRMRT; SM00487; BNPP_POSITIVE; 1.

PROSITE; PS50507; RDRP_POSITIVE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 QNEICLTHPITKYIMACMSADLEVTTSTWVLLGGVLAALAAYCLSVGCVVIVGHIELGGK
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Hepacivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              86.6%; Score 605; DB 12; Length 3023;
84.2%; Pred. No. 5.3e-55;
iive 11; Mismatches 10; Indels 0
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385 737 E2/NS1.

738 1014 NS2.

105 1665 NS3.

1666 1980 NS4.

1981 3023 NS5.

3023 AA; 329734 MW; 5268D1EC410AC545 CRC64;
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1760 SQWQKAEAFWQQH 1772
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                                                           MEROPS; S29.001; -.
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Hepatitis C virus.
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112; Conserv
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Best Local S
Matches 112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6 QNEITLIHPITKYIMTCMSADLEVITSTWVLVGGVLAALAAYCLSTGCVVIVGRIVLSGK
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Science 277:570-574(1997).
-!- SUBGUNT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED BY A LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS:
PROTEIN M AND GIYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN M AND GIYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX OF PROTEIN C AND MRNA (BY SIMILARITY).
EMBL; AF009606; ARAB66324.1; -- HSSP; P27958; 1HEI
                                                                                Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus
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Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
                                                                                                                                                                                                                                                    STRAIN=1a;
MEDLINE=95146953; PubMed=7844535;
Greene W.K., Cheong M.K., Ng V., Yap K.W.;
"Prevalence of hepatitis C virus sequence variants in South-East
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 138 138 15392 MW; F8CB866A53AA907B CRC64;
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01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Genome polyprotein.
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InterPro; IPR00251; HCV_core.
InterPro; IPR002519; HCV_env.
InterPro; IPR002511; HCV_NS1.
InterPro; IPR002518; HCV_NS2.
InterPro; IPR004109; HCV_NS3.
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EMBL, U14259; AAC53948.1; -.

HSSP; P27958; 1HEI.

InterPro; IPR000745; HCV_NS4a.

Pfam; PF01006; HCV_NS4a; 1.
Nonstructural protein (Fragment)
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                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                   Hepatitis C virus
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                                                                                                                                                          NCBI_TaxID=11103;
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J. Gen.
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036579;
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61 PAIVPDKEVLYQQYDEMEECSQAAPYIEQAQVIAHQFKGKVLGLLQRATQQQAVIEPIVT 120
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PROSITE; PS50507; RDRP_POSITIVE; 1.
PROSITE; PS50521; RDRP_VIRAL; 1.
ATP-binding; Coat protein; Envelope protein; Glycoprotein; Helicase; Hydrolase; Nonstructural protein; Polyprotein; RNA-directed RNA polymerase; Transferase; Transmembrane.
SEQUENCE 3011 AA; 327182 MW; E2E0EE809C63C1B9 CRC64;
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Hepatitis C virus.
Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae;
Hepacivirus.
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MEDLINE=95146953; PubMed=7844535;
Greene W.K., Cheong M.K., Ng V., Yap K.W.;
"Prevalence of hepatitis C virus sequence variants in South-East
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ouery Match 77.1%; Score 539; DB 12; Length 3011; Best Local Similarity 75.9%; Pred. No. 5.7e-48; Matches 101; Conservative 10; Mismatches 22; Indels 0;
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01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
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InterPro; IPR002668; HCV_NSSA.
InterPro; IPR001668; HCV_NSSA.
InterPro; IPR001650; Helicase_C.
InterPro; IPR0010550; Helicase_C.
InterPro; IPR007095; RNA_pol_DS_PS.
InterPro; IPR007094; RNA_pol_DS_PS.
InterPro; IPR007094; RNA_pol_PSvir.
Pfam; PF01543; HCV_core; 1.
Pfam; PF01543; HCV_core; 1.
Pfam; PF01550; HCV_NSS; 1.
Pfam; PF01560; HCV_NSS; 1.
Pfam; PF01006; HCV_NSS; 1.
Pfam; PF01006; HCV_NSS; 1.
Pfam; PF01006; HCV_NSSB; 1.
Pfam; PF01006; HCV_NSSB; 1.
Pfam; PF01066; HCV_NSSB; 1.
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EMBL; U14260; AAC53949.1; -.
HSSP; P27958; 1HEI.
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Pfam; PF01006; HCV_NS4a; 1.
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Query Match 77.0%; Score 538; DB 12; Length 138; Best Local Similarity 75.2%; Pred. No. 1.7e-49; Matches 100; Conservative 12; Mismatches 21; Indels (
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GenCore version 5.1.6 Copyright (c) 1993 - 2003 Compugen Ltd.

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699
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OM protein - nucleic search, using frame_plus_p2n model
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Xgapop 10.0, Xgapext
Ygapop 10.0, Ygapext
Fgapop 6.0, Fgapext
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Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Command line parameters:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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ALIGNMENTS

RESULT 1 BM305347	
LOCUS	BM305347 379 bp mRNA linear EST 02-JAN-2002
DEFINITION	EtESTee29g11.y1 Eimeria tenella M5-6 cDNA Neg Selected Eimeria
	tenella cDNA 5', mRNA sequence.
ACCESSION	BM305347
VERSION	BM305347.1 GI:18037053
KEYWORDS	EST.
SOURCE	Eimeria tenella
ORGANISM	Eimeria tenella
	Eukaryota; Alveolata; Apicomplexa; Coccidia; Eimeriida; Eimerlidae;
	Eimeria.
REFERENCE	1 (bases 1 to 379)

Db 321 CAGCAGCGGCAGCAG	RESULT 2 BU522891/c BU522891/c LOCUS DEFINITION AGENCOURT_10158423 NCI_CGAP_CG24 Mus musculus cDNA clone TMAGE: 6229486 5', mRNA sequence. ACCESSION BU522891 GI:22833329 VERSION BU522891.1 GI:22833329	_	Email: cgapbs-r@mail.nih.gov Tissue Procurement: The Cepko Laboratory CDNA Library Preparation: Life Technologies, Inc. CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Agencourt Bloscience Corporation Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov. k column: 22 http://image.llnl.gov. k column: 22 http://image.llnl.gov. k column: 22 High quality sequence stop: 567. FEATURES Location/Qualifiers 1. 954 //coganism="Mus musculus" //mol_type="Mus RNA" //strain="FVB/N" //db_xref="taxon:10090"	/clone="IMAGE:5529486" /lab_host="DH10B (TI phage-resistant)" /clone_lib="NCI_CGAP_CO24" /note="Organ: colon; Vector: pCMV-SPORT6; Site_1: Not1; Site_2: SalI; Cloned unidirectionally, Primer: Oligo dT.	Average insert Size 1.0 kD. Constructed by Lile Technologies. Note: this is a NCI_CGAP Library." BASE COUNT 219 a 263 c 251 g 219 t 2 others ORIGIN Alignment Scores: 6.14 Length: 954 Precent Similarity: 41.18% Conservative: 15 Best Local Similarity: 26.47% Mismatches: 44 Query Match: 12.16% Mismatches: 3 DB: 6.00 Conservative: 15 Best Local Similarity: 26.47% Mismatches: 44 Query Match: 13.16% Gaps: 3	US-09-638-693-36 (1-133) x BU522891 (1-954) Qy	Qy 21AspLeuGluValThrThrSerThrTrpValLeuLeuGlyGlyValLeu 36	0y 37 AlaAlaLeuAlaAlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGlu 56 :::	Qy 57 LeuGlyGlyLysProAlaIleValProAspLysGluValLeuTyrGlnGln 73 ::: ::: ::: ::: :::
AUTHORS Liberator, P., Diaz, C., Tang, K., Marra, M., Hillier, L., Kucaba, T., Martin, J., Wylie, T., Underwood, K., Steptoe, M., Theising, B., Allen , M., Bowers, Y., Person, B., Wahller, T., Gibbons, M., Pape, D., Harvey , N., Schurk, R., Ritter, E., Kohn, S., Florence, N., Shin, T., Jackson , Y., Cardenas, M., McCann, R., Waterston, R., Wilson, R. and Sibley, D. TITLE Washu-Merck Einerla tenella project	JOURNAL Unpublished COMMENT Contact: David Sibley, Ph.D. WashU-Merck Bimeria tenella project WashU-Merck Bimeria tenella project WashIngton University School of Medicine 4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108, USA Tel: 314 286 1800 Fax: 314 286 1810	ENEWALESON.WISTL.edu Contact David Sibley (toxoestéborcim.wustl.edu) for further information relating to organism, libraries, or clone availability. Seq primer: -40RP from Gibco High quality sequence stop: 303. FEATURES Location/Qualifiers 1. 379 /mol_type="mRNA" /mol_type="mRNA" /strain="LSIB" /doc_to_to_to_to_to_to_to_to_to_to_to_to_to_	/dev_stage="wetcor: 500.2" /dev_stage="wetcor: 500.2" /dab_host="DH10B (GENEHOG, E.coli HS996)" /clone_lib="limeria tenella M5-6 cDNA weg Selected" /note="wetcor: Bluescript SK-; Site_l: EcoRI; Site_2: XhoI : Merozoites were obtained from ceacal scrapings of	DATOR (GENERALDS). The library may contain a small percentage of host or bacterial contaminents." BASE COUNT 79 a 133 c 102 g 65 t ORIGIN	Alignment Scores: 1.32 Pred. No.: 5core: 85.50 Matches: 93.32 Percent Similarity: 39.32\$ Conservative: 16 Best Local Similarity: 25.64\$ Mismatches: 42 Query Match: 12.23\$ Indels: 29 Gaps: 4 US-09-638-693-36 (1-133) x BM305347 (1-379) Oy 5 CysLeuThrHisProlleThrLysTyrlleMetAlaCysMetSeralaAspLeuGluVal 24	Db 102 TGCCTCAGTACCCTTGACGGTTATCTCCTGCTGCAGAAGGGGCCCCCCAAGAGCAG 161 Qy 25 ThrThrSerThrTrpValLeuLeuGlyGlyValLeuAlaAlaLeuAlaAlaTyr 42 Db 162 CTAAACCCTCCCTGGGGGCCCCTGGGTGGGGCCCCTGCTATACACC 212	Oy 43CysLeuSerValGlyCysValValIleValGlyHis1leGluLeuGlyGlyLys 60	Oy 61 ProalaileValProaspLysGluValLeuTyrGlnGlnTyrAspGluMetGluGluCys 80 :::::: :::::	Oy 81 SerGlnAlaAlaProTyrIleGluGlnAlaGlnValIleAlaHisGlnPheLysGlyLys 100

69 ValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIleGlu 88 ::: ::: ::: :::: 471 CTCCGTCACCACGGCGTCCTGCACCTTCAC	129 PheTrpHisI 627 GTTCTGCACC BY203246 RII BY203246 RII BY203246 RII	BY203246.1 GI:26382965 BY203246.1 GI:26382965 EST. Mus musculus (house mouse) Mus musculus Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. 1 (bases 1 to 358) Okazaki,Y., Furuno,M., Kasukawa,T., Adachi,J., Bono,H., Kondo,S., Nikaido,I., Osato,N., Saito,R., Suzuki,H., Yamanaka,I., Kiyosawa,H., 'Yaqi,K., Tomaru,Y., Hasegawa,Y., Nogami,A., Schonbach,C., Gojobori,T., Baldarelli,R., Hill,D.P., Bult,C., Hume,D.A., Quackenbush,J., Schriml,L.M., Kanapin,A., Matsuda,H., Batalov,S.,	<pre>beisel, K.W. Blake, J.A., Bradt, D., Brusic, V., Chothiah, C., Corbani, L.E., Cousins, S., Dalla, E., Dragani, T.A., Fletcher, C.F., Forrest ,A., Frazer, K.S., Gaasterland, T., Gariboldi, M., Gissi, C., Godzik, A. , Gough, J., Grimmond, S., Gustincich, S., Hirokawa, N., Jackson, I.J., Jarvis, E.D., Kanai, A., Kawaji, H., Kawasawa, Y., Kedzierski, R.M., King, B.L., Konaqaya, A., Kurochkin, I.V., Lee, Y., Lenhard, B., Lyons King, B.L., Maltals, L., Marchionni, L., Mckenzle, L., Miki H., Naqashima, T., Numata, K., Okido, T., Pavan, W.J., Pertea, G., Pesole, G., Petrovsky, N., Pillai, R., Pontius, J.U., Qi, D., Ramachandran, S., Ravasi, T., Reed, J.C., Reed, D.J., Reid, J., Ring ,B.Z., Ringwald, M., Sandelin, A., Scheider, C., Semple, C.A., Setou ,M., Shimada, K., Sultana, R., Takenaka, Y., Taylor, W.S., Teasdale</pre>	R.D., Tomita, W., Verardo, R., Wagner, L., Wahlestedt, C., Wang, Y., Watanabe, Y., Wells, C., Wilming, L.G., Wynshaw-Boris, A., Yanagisawa, M., Yang, T., Yang, L., Yang, L.G., Whyshaw-Boris, A., Yanagisawa, M., Yang, T., Yang, L., Yang, T., Zavolan, M., Zhu, Y., Zimmer, A., Carninci, P., Hayatsu, N., Hirozane-Kishikawa, T., Komno, H., Nakamura, M., Sakazum, N., Sato, K., Shiraki, T., Waki, K., Kawai, J., Azakawa, T., Fukuda, S., Hara, A., Hashizume, W., Imotani, K., Ishii, Y., Ich, M., Kagawa, T., Miyazaki, A., Yoshino, M., Waterston, R., Lander, E.S., Rogers, J., Birney, E. and Hayashizaki, Y. Analysis of the mouse transcriptome based on functional annotation of 60,770 full-length cDNAs L. Nature 420, 563-573 (2002)	
60 60 60 60 60 60 60 60 60 60 60 60 60 6	Qy Db RESULT 4 BY203246/C LOCUS LOCUS DEFINITION ACCESSION	VERSION KEYWORDS SOURCE ORGANISM REFERENCE AUTHORS		TITLE JOURNAL · MEDLINE	COMMENT
Db 126 ATAAGCCCAGGCAGCTCTCGGACCTGCTCCGCGAGATCCTCGCTCCTCAGCAAGTGG 67 Qy 74 TyraspGluMetGluGluCysSerGlnAlaAlaProTyrIleGluGlnAlaGlnValile 93	DEFINITION BJ311781 648 bp mRNA linear EST 18-SEP-2002 DEFINITION BJ311781 Y. Ogihara unpublished CDNA library, Wh_yd Triticum aestivum cDNA clone whyd29f13 3', mRNA sequence. ACCESSION BJ311781 VERSION BJ311781.1 GI:23159480 KEYWORDS EST. SOURCE Triticum aestivum (bread wheat) ORGANISM Triticum aestivum (bread wheat) SOURCE Triticum aestivum Eukaryota: Viridiplantae: Streptophyta: Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae	REFERENCE 1 (bases 1 to 648) AUTHORS Ogihara,Y. and Murai,K. TITLE Expressed genes in Triticum aestivum JOURNAL Unpublished CONMENT Contact: Tadasu Shin-i Center For Genetic Resource Information National Institute of Genetics 1111 Yata, Mishima, Shizuoka 411-8540, Japan Tel: 81-559-81-6855 Fax: 81-559-81-6855 Email: tshini@genes.nig.ac.jp.	FEATURES LOCATION/QUALITIERS 1. 648 /Organism="Triticum aestivum" /Mol_type="minkNa" /Golltivaz="Chinese Spring" /	Alignment Scores: Pred. No.: 84.50 Matches: 84.50 Matches: 98 Percent Similarity: 12.09 Best Local Similarity: 12.09 Mismatches: 12.09 Mismatches: 12.09 Mismatches: 12.09 Mismatches: 12.09 Mismatches: 12.09 Mismatches: 13.09 Mismatches: 14.09 Mismatches: 15.09 Mismatches: 16.18 Mismatches: 17.09 Mismatches: 18.09 Mismatches: 18.09 Mismatches: 19.09 Mismatches: 10.09 Mismatches: 10.09	27 SerThTTPValLeuLeuGlyGlyValLeuAlaAlaLeuAlaAlaTyrCysLeuSer ::::

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                              VERSION
                                                                                                     prepare full-length cDNA libraries for rapid discovery of new genes. Genome Res. 10 (10), 1617-1630 (2000)

FIREN integrated sequence analysis (RISA) system-384-format Result (11), 1757-1771 (2000)

Computer-based methods for the mouse full-length cDNA library denome Reguenced in Mouse Genome Exploration of a Encyclopedia Project of Genome Exploration Research Group in Riken Division of Experimental Animal Research in Riken contributed to
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                                                                                                                                                                                                                                                                                                                                                                      prepare mouse tissues.
Tissues were provided by Dr. John Todd (Dept. of Medical Genetics Wellcome Trust Centre for Molecular Mechanisms in Disease Wellcome Trust/MRC building Addenbrookes Hospital Cambridge) whose assistance we gratefully acknowledge.
Please visit our web site (http://genome.gsc.riken.go.jp) for further details.
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Submission
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                                            Computational Analysis of Full-Length Mouse cDNAs Compared with Human Genome Sequences Mamm. Genome. 12, 673-677 (2001)
Normalization and subtraction of cap-trapper-selected cDNAs to
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+ve dendritic cells" 68 t
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Nakaido,I., Osato,N., Kasukawa,T., Adachi,J., Bono,H., Kondo,S., Nikaido,I., Osato,N., Baito,R., Suzuki,H., Yamanaka,I., Kiyosawa,H., Yagi,K., Tomaru,Y., Hasegawa,Y., Nogami,A., Schonbach,C., Gojobori,T., Baldarelli,R., Hill,D., Bult,C., Hume,D.A., Quackenbush,J., Schriml,L.M., Kanaph,A., Matsuda,H., Batalov,S., Beisel,K.W., Blake,J.A., Bradt,D., Brusic,V., Chothia,C., Corbani,L.E., Cousins,S., Dalla,E., Dragani,T.A., Fletcher,C.F., Forrest,A., Frazer,K.S., Gaasterland,T., Gariboldi,M., Gissi,C., Godzik,A., Gough,J., Grimmond,S., Gustincich,S., Hirokawa,N., Jackson,I.J., King,B.L., Kanagaya,A., Kuvochkin,I.V., Lee,Y., Lehbard,B., Lyons,P.A., Maglott,D.R., Maltais,L., Marchionni,L., McKenzie,L., Miki, H., Nagashima,T., Numata,K., Okido,T., Pavan,W.J., Pertea,G.,
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                                                                                                 /organism="Mus musculus"
/mol_type="mRNA"
/strain="NOD"
/db_xref="taxon:10090"
/clone="F630325L14"
/cell_type="NOD-derived CD11c +ve dendritic cells"
/clone_lib="RIKEN full-length enriched, NOD-derived CD11c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          173 ATAAGCCCAGGCAGACTGTCTCGGACTGTCCGCGAGATCCTCAGCAAGTGG 114
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------AspLeuGluValThrThrSerThrTrpValLeuGlyGlyValLeu 36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57 LeuGly---GlyLysProAlaIleValProAspLysGluValLeuTyr-----GlnGln
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37 AlaAlaLeuAlaAlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGlu
assistance we gratefully acknowledge.
Please visit our web site (http://genome.gsc.riken.go.jp) for
further details.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   113 TACAGGACTGGCTGGCTCAACTGCGGTCCCTGGAATC 72
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B.Z., Ringwald,M., Sandelin,A., Schneider,C., Semple,C.A., Setou
,M., Shimada,K., Sultana,R., Takenaka,Y., Taylor,M.S., Teasdale
,R.D., Tomita,M., Verardo,R., Wagner,L., Wahlestedt,C., Wang,Y.,
Watanabe,Y., Wells,C., Wilming,L.G., Wynshaw-Boris,A., Yanagisawa
,M., Yang,L., Yang,L., Yuan,Z., Zavolan,M., Zhu,Y., Zimmer,A.,
Carninci,P., Hayatsu,N., Hirozane-Kishikawa,T., Konno,H., Nakamura
,M., Sakzaume,N., Sato,K., Shiraki,T., Maki,K., Kawai,J., Alzawa,K.,
Arakawa,T., Fukuda,S., Hara,A., Hashizume,W., Imotani,K., Ishli
,Y., Itoh,M., Kagawa,I., Miyazaki,A., Sakai,K., Sasaki,D., Shibata
,K., Shinagawa,A., Yasunishi,A., Yoshino,M., Waterston,R., Lander
,E.S., Rogers,J., Birney,E. and Hayashizaki,Y.
Analysis of the mouse transcriptome based on functional annotation
of 60,770 full-length cDNAs
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Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new Genose. Genome Res. 10 (10), 1617-1630 (2000)

RIKEN integrated sequence analysis (RISA) system--384-format sequencing pipeline with 384 multicapillary sequencer. Genome Res. 10 (11), 1757-1771 (2000)

Computer-based methods for the mouse full-length cDNA encyclopedia: real-time sequence clustering for construction of a norredundant cDNA library. Genome Res. 11 (2), 281-289 (2001) cDNA library was prepared and sequenced in Mouse Genome Encyclopedia Project of Genome Exploration Research Group in Riken Genomic Sciences Center and Genome Science Laboratory in Riken Genomic Sciences Centers and Genome Science Laboratory in Riken Genomic Sciences Centers and Genome Science Laboratory in Riken Genomic Sciences Centers and Genome Science Laboratory in Riken Genome Science Research Group in Riken Genome Science Research Genome Science Centers and Genome Science Research Group in Riken Genome Science Research Genome Science Resear
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URL:http://genome.gsc.riken.go.jp,
Alzawark., Akimura.T., Arakwar.T., Carninci,P., Fukuda,S., Hirozane
Alzawar.K., Akimura.M., Arakwar.T., Arakwar.J., Konno,H., Miyazaki,A.,
T., Imotani,K., Ishii,Y., Itoh,M., Kawai,J., Konno,H., Miyazaki,A.,
Murata,M., Nakamura,M., Nomura,K., Numazaki,R., Ohno,M., Sakai,K.,
Sakazume,N., Sasaki,D., Sato,K., Shibata,K., Shiraki,T., Tagami,
M., Waki,K., Watahiki,A., Muramatsu,M. and Hayashizaki,Y. Direct
Submission
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Tissues were provided by Dr. John Todd (Dept. of Medical Genetics Wellcome Trust Centre for Molecular Mechanisms in Disease Wellcome Trust/MRC building Addenbrookes Hospital Cambridge) whose assistance we gratefully acknowledge.

Please visit our web site (http://genome.gsc.riken.go.jp) for
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/clone_lib="RIKEN full-length enriched, NOD-derived CD11c
+ve dendritic cells"
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/clone="F630008105"
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US-09-638-693-	-36 (1-133) x BY175124	(1-366)		_	Qy
Qy 10	IleThrLysTyrIleMetAlaCysMetSerAla	CysMetSerAla	20		QO
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Db 292	AGCACATTCCAGAGCTTAACTG	FIGGCCACTGGTCGGTG	AGCACATTCCAGAGCTTAACTGTGGCCACTGGTCGGTGGAGTACCTGAGGGGGTGTTCAA 233		δy
37	AlaAlaLeuAlaAlaTyrCysI :::	ceuSerValGlyCysVal	AlaAlaLeuAlaAlaTyrCysLeuSerValGlyCysValValIleValGlyHisIleGlu 56		qq
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57	LeuGlyGlyLysProAlal	<pre>flevalProAspLysGlu ::: </pre>	LeuGlyGlyLysProAlalleValProAspLysGluValLeuTyrGlnGln 73		QQ
172	ATAAGCCCAGGCAGACCTGCTC	TCGGACCTGTCCGCGAG	SATCCTGCTCCTCAGCAAGTGG 113		. Qy
74	TyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIle	SerGlnAlaAlaProTyr	(Ile 87		q
112	TACAGGACTGGCGAGGCTGGCTCAACTGCGGTCCCTGGAATC	CAACTGCGGTCCCTGGA	NATC 71		Qy
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LOCUS BJ:	BJ311912 560 bp BJ311912 Y. Ogihara unpublished		mRNA linear EST 18-SEP-2002 CDNA library, Wh vd Triticum	22	οy
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2	B5311912.1 GI:23159531 EST. Triticum aestivum (bread	wheat)			RESULT BJ3002 LOCUS
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Comment Cer Nat Nat 111	Contact: Tadasu Snin-1 Center For Genetic Resource In National Institute of Genetics 1111 Yata, Mishima, Shizuoka 4 Tel: 81-559-81-6856	-1 esource Information f Genetics Shizuoka 411-8540, Japan	pan		REFEREN AUTHC TITLE
Fax Ema FEATURES SOUTCE	Fax: 81-559-81-6855 Email: tshini@genes.nig.ac.jp Location/Qualifiers	ac.jp. iers			JOURN
	/organism="Triticum aestivum" /mol_type="mRNA" /cultiva="chinese Spring" /db_xref="taxon:4565" /clone="whyd29015" /tissue_type="spikelet at lat//dev_stage="Feekes' scale 6"	forganism="Triticum aestivum" mol_type="mRNA" col_type="mRNA" db_xref="taxon:4565" clone="whyd29o15" fissue_type="spikelet at late flowering" dev_stage="Reekes' scale 6"	lowering"		FEATURE
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Alignment Scores: Pred. No.: Score: Percent Similarity: Best Local Similarity Query Match:	55: 5.64 82.50 1ity: 42.07% Larity: 26.21%	Length: Matches: Conservative: Mismatches:	560 38 553 29 29		BASE CO
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; Pooldeae; Triticae; Triticum.

7 Triticae; Triticum.

8 Ogihara,Y. and Murai,K.

8 Expressed genes in Triticum aestivum

ND published

Contact: Tadasu Shin-i

Center For Genetic Resource Information

National Institute of Genetics

1111 Yata, Mishima, Shizuoka 411-8540, Japan

Tel: 81-55-81-6855

Fax: 81-55-81-6855
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357 CTCCGTCACCGCGTCCTGCACCTTCAC.------GCGCCCCGT---CCA 398
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c 207 c 159 g 97 t l others
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yo q	7 ThrHisProIleThrLysTyrIleMetAlaCysMetSerAlaAspLeuGluValThrThr 26 +	Perc Best Quer
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QY	46 ValGlyCysValValIleValGly 53	qa
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οy	54 HisileGluLeuGlyGlyLysProAlaileValProAspLysGlu 68	qa
e qa	381 CATGTGCGACTGGGGGGGTCCACCTGGTACCACGCCCCGCCGTCGTACCCGATGTGGAA 322	Qy
ογ	69 ValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIleGlu 88	qq
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RESULT 9 BJ305350/c	,u	qq
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	Tel: 81-559-41-6856	PA
250000000000000000000000000000000000000	Fax: 81-559-81-6855 Email: tshinidgenes.nig.ac.jp.	COMM
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	/organism="Titicum aestivum" /mol_type="mRNA"	
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae; Triticae; Triticum.

1. (Dases 1 to 595)
2. (Spihara, Y. and Murai, K. Expressed genes in Triticum aestivum
3. Ogihara, Y. and Murai, K. Expressed genes in Triticum aestivum
4. Unpublished
6. Contact: Tadasu Shin-i
7. Contact: Tadasu Shin-i
7. Contact: Tadasu Shin-i
8. Triticum aestivum
8. Institute of Genetics
1111 Yata, Mishina, Shizuoka 411-8540, Japan
1111 Yata, Mishina, Shizuoka 411-8540, Japan
1128-81-6855
8. Fax: 81-559-81-6855
8. Email: tshini@genes.nig.ac.jp.
1. Location/Qualifiers
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BJ315881 GI:23161135
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|31 GGCGGTGGGGCAGTGGTCTTTCAGGGGGTGGCCGTGGGGGGGTGATGGAGACACGGATGG 372
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae; Triticeae; Triticum.

1 (bases 1 to 620)
Ogihara, Y. and Murai, K.
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/db_xref="taxon:4565"
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/tissue_type="root"
/dev_stage="Feekes' scale 1"
/clone_lib="Y. Ogihara unpublished cDNA library, Wh_r"
a 210 c 176 g 120 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          510 ACCCATCAGCTGGAT-----CTAGGGGTTGTAGAAGACGATCTTGATCTCGAC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69 ValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIleGlu
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38
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Matches:
Conservative:
Mismatches:
                                                   /organism="Triticum aestivum"
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Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (1-615)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-638-693-36 (1-133) x BJ282133
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Unpublished
Contact: Tadasu Shin-i
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|GTTCTGCACCGTCAC 109
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82.50
42.07%
26.21%
11.80%
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Best Local Similarity:
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BE404536/c
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                            AUTHORS
TITLE
JOURNAL
COMMENT
                                                                                                                                                                                                                                                                                                  BASE COUNT
               REFERENCE
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Triticum aestivum
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae
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Triticum
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                                                                                                                  /mol_type="mnna" acception"
/cultivar="chinese Spring"
/db_txef="taxon:4565"
/clone="why65mod"
/tissue_type="spikelet at late flowering"
/dev_stage="reekes' scale 6"
/clow_lb="Y. Ogihara unpublished cDNA library, Wh_yd"
a 211 c 177 g 122 t
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Center For Genetic Resource Information National Institute of Genetics 1111 Yata, Mishima, Shizuoka 411-8540, Japan Tel: 81-559-81-6856 Fax: 81-559-81-6856 Eax: B-559-81-6856 Eax: Location/Qualifiers
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Matches:
Conservative:
Mismatches:
Indels:
Gaps:
                                                                                                        /organism="Triticum aestivum"
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BJ305233.1 GI:23156863
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82.50
42.07%
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Best Local Similarity:
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VERSION
KEYWORDS
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BE404536 640 bp mRNA linear EST 21-JUL-2000 WHE0443_E02_J03ZS Wheat etiolated seedling root cDNA library Triticum aestivum cDNA clone WHE0443_E02_J03, mRNA sequence. BE404536
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                                                                                                                                                                                                                                                                                                                                                                                                             /tissue_type="spikelet at late flowering"
/dev_stage="Feekes' scale 6"
/clone_lib="Y. Ogihara unpublished cDNA library, Wh_yd"
218 c 175 g 110 t 2 others
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            54 HisIleGluLeuGlyGly------LysProAlaIleValProAspLysGlu
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23
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                                                                                                   Contact: Tadasu Shin-1
Center For Genetic Resource Information
National Institute of Genetics
1111 Yata, Mishima, Shizuoka 411-8540, Japan
Fax: 81-559-81-6855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative:
Mismatches:
                                                                                                                                                                                                                                                                              1. .621
/organism="Triticum aestivum"
; Triticeae; Triticum.
1 (bases 1 to 621)
Ogihara,Y. and Mural,K.
Expressed genes in Triticum aestivum
Unpublished
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Matches:
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/clone="whyd29f13"
                                                                                                                                                                                                                                 Email: tshini@genes.nig.ac.jp.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      46 ValGlyCysValValIleVal----
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82.50
42.07%
26.21%
11.80%
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Best Local Similarity:
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Spermatophyta; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Triticum. (Cases I to 640)
Ogihara, Y. and Murai, K. Expressed genes in Triticum aestivum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BJ306865 Y. Ogihara unpublished cDNA library, Wh_yd Triticum aestivum cDNA clone whyd5m04 3', mRNA sequence.
      89 GlnAlaGlnValIleAlaHisGlnPheLysGlyLysValLeuGlyLeuLeuGlnArgAla 108
                                                                                                                   287
                                                                                                                                                                                                                                                       109 ThrGlnGlnGlnAlaValIleGluProIleValThrThrAsnTrpGlnLysLeuGluAla 128
                                                                                                                                                                                                                                                                                 161 ACCCATCAGCTGGAT-----CTAGGGGTTGTAGAAGACGATCTTGATCTCGTCGAC 211
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /mol_type="mrNA"
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//db_xref="taxon:4565"
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185 c 204 g 118 t lothers
                                                                                                                   328 CTCCGTCACCACGGCGTCCTGCACCTTCAC--------GCGCCCCGT---CCA
                                                                          69 ValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIleGlu
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Center For Genetic Resource Information
National Institute of Genetics
1111 Yata, Mishima, Shizuoka 411-8540, Japan
Fax: 81-559-81-6855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length:
Matches:
Conservative:
Mismatches:
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/organism="Triticum aestivum"
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Triticum aestivum
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Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BJ306865.1 GI:23157514
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172 GTTCTGCACCGTCAC 158
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US Department of Agriculture, Agriculture Research Service, Pacific West Area, Western Regional Research Center
West Area, Western Regional Research Center
West Subsect, Albany, CA 94710, USA
Tel: 5105595773
Fax: 5105595818
Fax: 5105595818
Faxi: 5105596818
Fax: 5105596818
Fax:
                                                                                   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; Liliopsida; Poales; Poaceae; Pooideae; Triticeae; Triticum.

1 (bases 1 to 640)
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                                                                                                                                                                               Anderson,O.D., Chao,S., Choi,D.W., Close,T.J., Fenton,R.D., H., P.S., Hsia,C.C., Kang,Y., Lazo,G.R., Miller,R., Rausch,C.J., Seaton,C.L. and Tong,J.C.
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Triticum aestivum
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ΟŻ	46 ValGlyCysValValI	46 ValGlyCysValValIleValGly 53
qa	272 GGCGGTGGGGCAGTGG	111 272 GGCGGTGGGGCAGTGGTCTTTCAGGGGGTGGCCGTGGGGGGGTGATGGAGACACGGATGGG 331
Qy	54 HislleGluLeuGlyGly	lyLysProAlaIleValProAspLysGlu 68
qa	332 CATGTGCGACTGGGCG	Ę
Qy	69 ValLeuTyrGlnGlnT	69 ValLeuTyrGlnGlnTyrAspGluMetGluGluCysSerGlnAlaAlaProTyrIleGlu 88
qa	392 CTCCGTCACCACGGCG	392 CTCCGTCACCGCGTCCTGCACCTTCAC
Qy	89 GlnAlaGlnValIleA	89 GInAlaGlnValIleAlaHisGlnPheLysGlyLysValLeuGlyLeuGlnArgAla 108
qa	434 CGAGCACACGTCGTACGACAC	:::
Qy	109 ThrGlnGlnGlnAlaV	109 ThrGlnGlnGlnAlaValIleGluProIleValThrThrAsnTrpGlnLysLeuGluAla 128
qa	488 GTAGAGGAGCTTGCTG	488 GTAGAGGAGCTTGCTGTTGGCCAGGGGCTACCGAGGTAGAGGTCCTTGCCGCACAG 547
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